

LE LABYRINTHE DU TEMPS

EXAMPLES OF CREATIONS IN PHOTOS

STEPHANE DE GERANDO

3icar / icarEditions

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1

GENERAL PRESENTATION

THE LABYRINTH OF TIME

Described as "monumental" by the press, The Labyrinth of Time (LDT) is conceived as a "whole" simultaneously polyartistic, technological, linked to research, pedagogy, and communication.



LDT: Blue bird virtual tableaux, with possible large-screen installation

In continuous development for over twenty years, this multifaceted work combines museum installations, digital arts, mapping, interactive visual and sonic installations, sculptures with 3D projection, mixed instrumental creations with real-time electronics, polyartistic creations with real-time scores — textual (theatre), gestural (dance), musical, visual — interactive educational installations, virtual reality immersion, publications and conferences, research and world premieres.



LDT, installation, Museum of Contemporary Art of Toulouse

AN AESTHETIC CHALLENGE

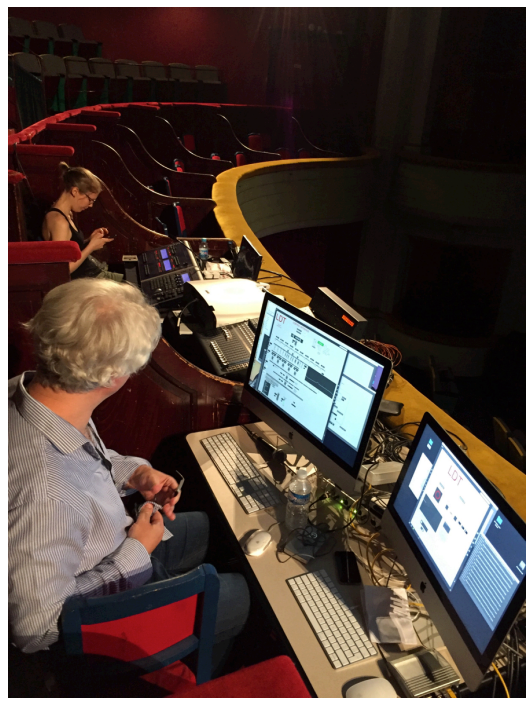
A polymorphic writing of memory that crosses, uncrosses, interweaves at different scales of time and space, the LDT is a combination of high speeds and fragmentations, at once a composition of satellites (autonomous LDT works) and real-time algorithmic invention of large cycles.

The chance-determinism couple is at the center of the Labyrinth's invention, returning us to a simultaneous feeling of presence-absence.

UNIQUE AND CUSTOM CREATION

Always different and of modular architecture, LDT is specifically designed to be adapted to any type of event, venue, and means.

For each creation of a Labyrinth, a set of specifications is decided, from a small format (video-projection) to large monumental and poly-artistic formats.



Scène nationale le Granit, Festival international le FIMU,
creation of LDT cycle 9,
three networked computers (two in the balcony)

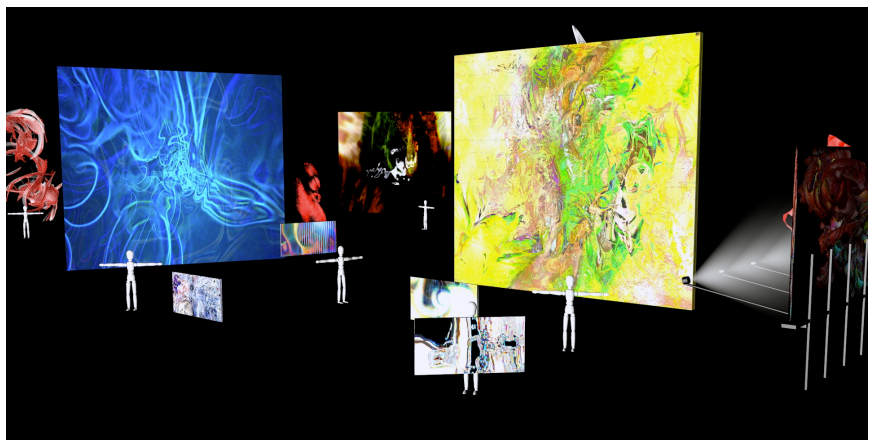
HIGH TECHNOLOGY

The Labyrinth's computer programs (registered trademark GC) are developed in the most powerful environments such as MAX-MSP-JITTER for real-time interaction, Protools for audio mixing, and image processing and 3D synthesis software.

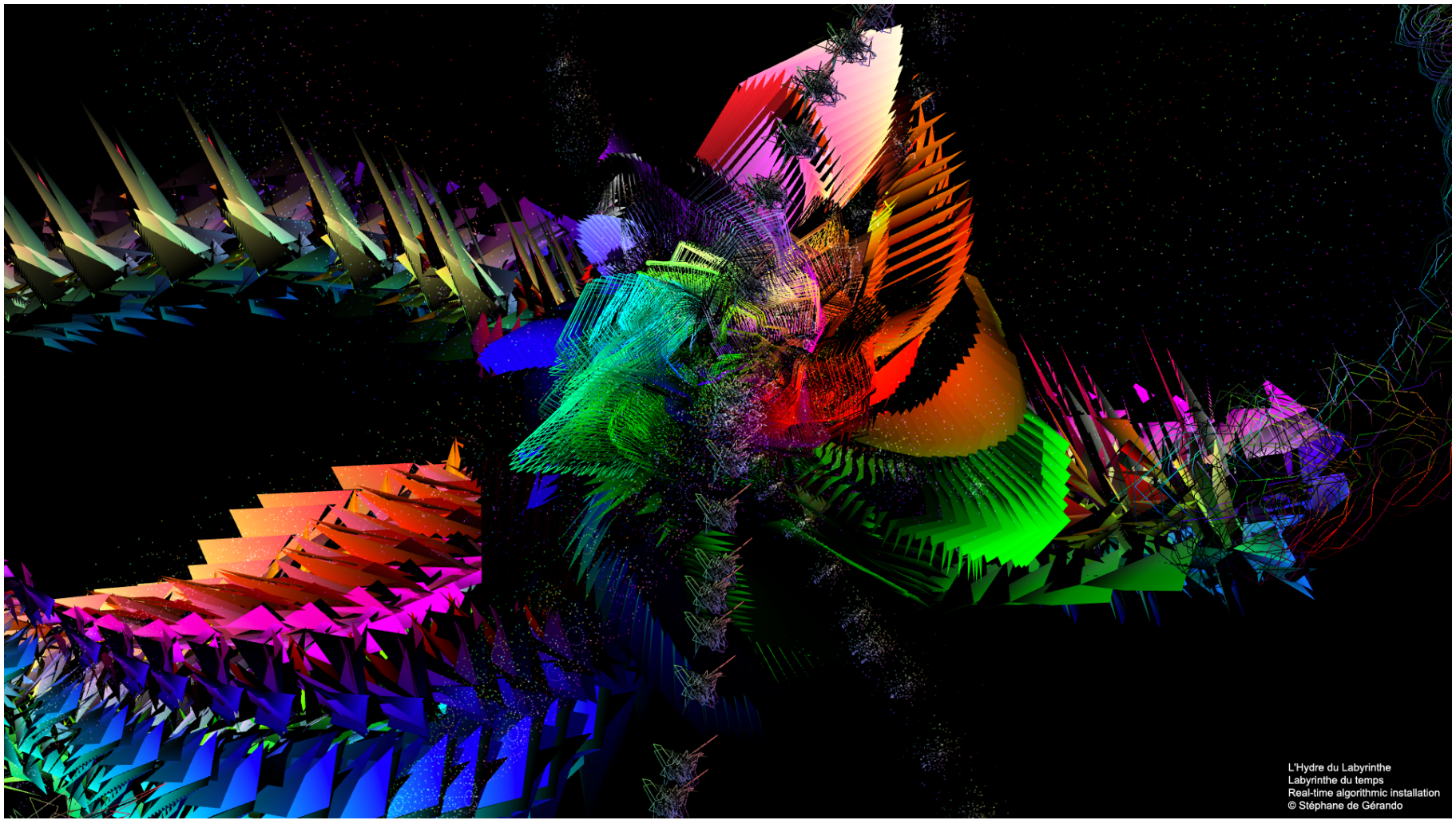
STÉPHANE DE GERANDO

Artistic career: First Prize and 3rd Cycle first-nominated in composition at the Conservatoire National Supérieur de Musique de Paris, France; international prizes including the Darmstadt Festival in Germany; more than 90 works including museum installations, international collaborations with French embassy support, polyartistic creations with dance, theatre, digital arts and synthetic images, State commissions, Radio-France commissions [...].

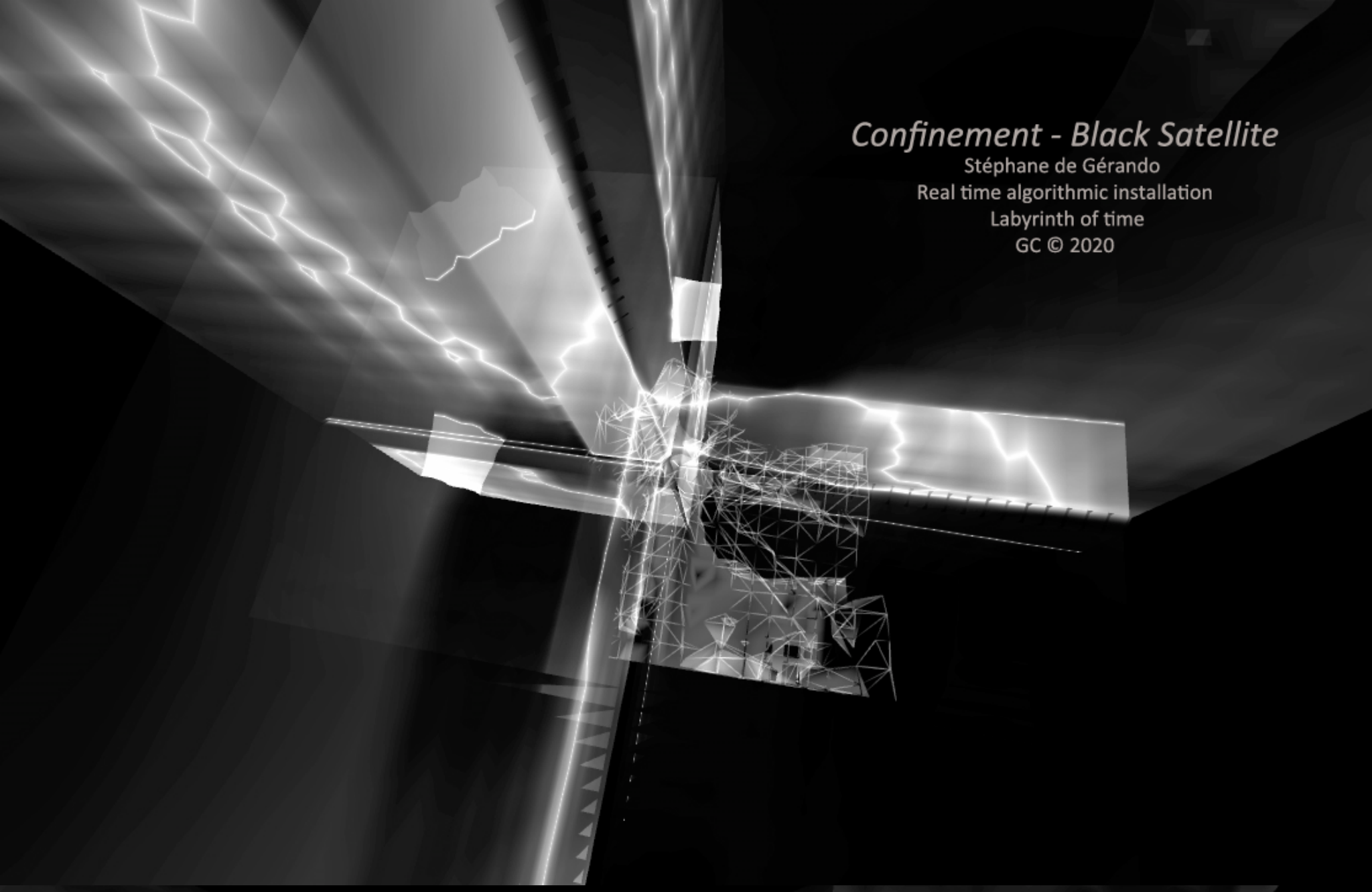
Scientific career: Expert in new technologies of image and sound in relation to creation; Doctor of Universities; Habilitated to Direct Research; former intern then consultant at IRCAM; former director of a university department and higher teacher training center linked to the Ministry of Culture in France; books, dictionaries, articles and world premieres with CNRS, CEA, IRCAM collaborators...



LDT, virtual tableaux with multi-screen projection and digital sculptures (from LDT cycle 9)



L'hydre du labyrinthe (création algorithmique 2018)


Confinement - Black Satellite
Stéphane de Gérando
Real time algorithmic installation
Labyrinth of time
GC © 2020


Confinement - Black Satellite
Stéphane de Gérando
Real time algorithmic installation
Labyrinth of time
GC © 2020

2

PLANNING A CREATION
"CUSTOM-MADE" WITH LDT

A CUSTOM CREATION – MAKE YOUR CHOICE...

From a simple videoprojection — small format — to the installation of a large Labyrinth, every LDT creation project is made to measure, tailored to a particular event, venue, and available resources.

LDT CYCLE

- *Spectacular projection of a large cycle, real-time creation*

Indoors or outdoors, large screen, computer(s), loudspeakers
Real-time sonic and visual creation via LDT algorithms
Possibility of a polyartistic setup: dance, actors, musicians

LDT SATELLITES

- Digital tableaux (on screens or videoprojection)
- Fixed LDT images (without sound) and dynamic tableaux (videos with or without sound)
- Real-time visual and sonic tableaux (on screens or videoprojection) Computer program (with laptop; possibility of audience interaction)
- Sonic installations Indoors or outdoors, sound files or real-time computer program
- Auditorium-type videoprojection Journey of over 1h30 through the Labyrinth (videos), spatialized 5.1 sound
- Monumental mapping Videoprojection and sonic installation indoors/outdoors
- Mixed instrumental pieces With real-time electronics
- Digital sculptures (with or without sound)
- Mapping on 3D surfaces
- Immersive installation, virtual reality VR headset, real-time interaction with public and projection
- Polyartistic installation with real-time scores Textual, physical, musical, visual, electronic scores — dance, theatre, musician, video, technology
- Interactive digital educational workshops Minimum one computer (large screen and 4 speakers)
- Genesis and development of LDT Video installation
- Conferences — research
- Publications

3

EXAMPLES OF CREATION OF THE LABYRINTH OF TIME





GUEST COMPOSER PORTRAIT OF THE COMPOSER RESEARCHER STÉPHANE DE GERANDO

7TH TEHRAN INTERNATIONAL ELECTRONIC MUSIC FESTIVAL 2025

Portrait of composer Stéphane de Gérando, world premiere of Crossroads, electroacoustic and visual cycle of the Labyrinth of Time, Tuesday 9 September 2025, 8pm, Museum of Music of Tehran.

Tuesday 9 September 2025, 8pm, Museum of Music of Tehran, seminar "composition – research". Thursday 11 September 2025, 11:30am–1pm (10am–11:30am France time) "Exchanges with Stéphane de Gérando ». 3:30pm–5pm (2pm–3:30pm France time) "Trajectory of a composer-researcher".

Crossroads, CD 2025.





MORPHILUDE

ACE ALBUM 2024

• Morphilude, mixed cycle of the Labyrinth of Time of 50 minutes for flutes, real-time algorithmic electronics and fixed sounds, 26 sequences — sound spatialized around the audience, Matteo Cesari, flutes.

• Discographic label ACEL, album released in 2024, with support from the Centre National de la Musique (CNM), La Maison de la Musique Contemporaine (MMC), La Société civile des producteurs phonographiques (SCPP), and the Institut International pour l'Innovation, la Création Artistique et la Recherche (3icar).

• 40-page booklet









FINE-TERRE SONIC AND VISUAL INSTALLATION ABBEY POINTE ST MATHIEU

• Spatialized sonic and visual installation of the Labyrinth of Time, 5 August 2023

• 10 hours (12pm–11pm) controlled or invented in real time by the LDT algorithms

• Day conceived and realized by Stéphane de Gérando

• On a classified natural and historic site

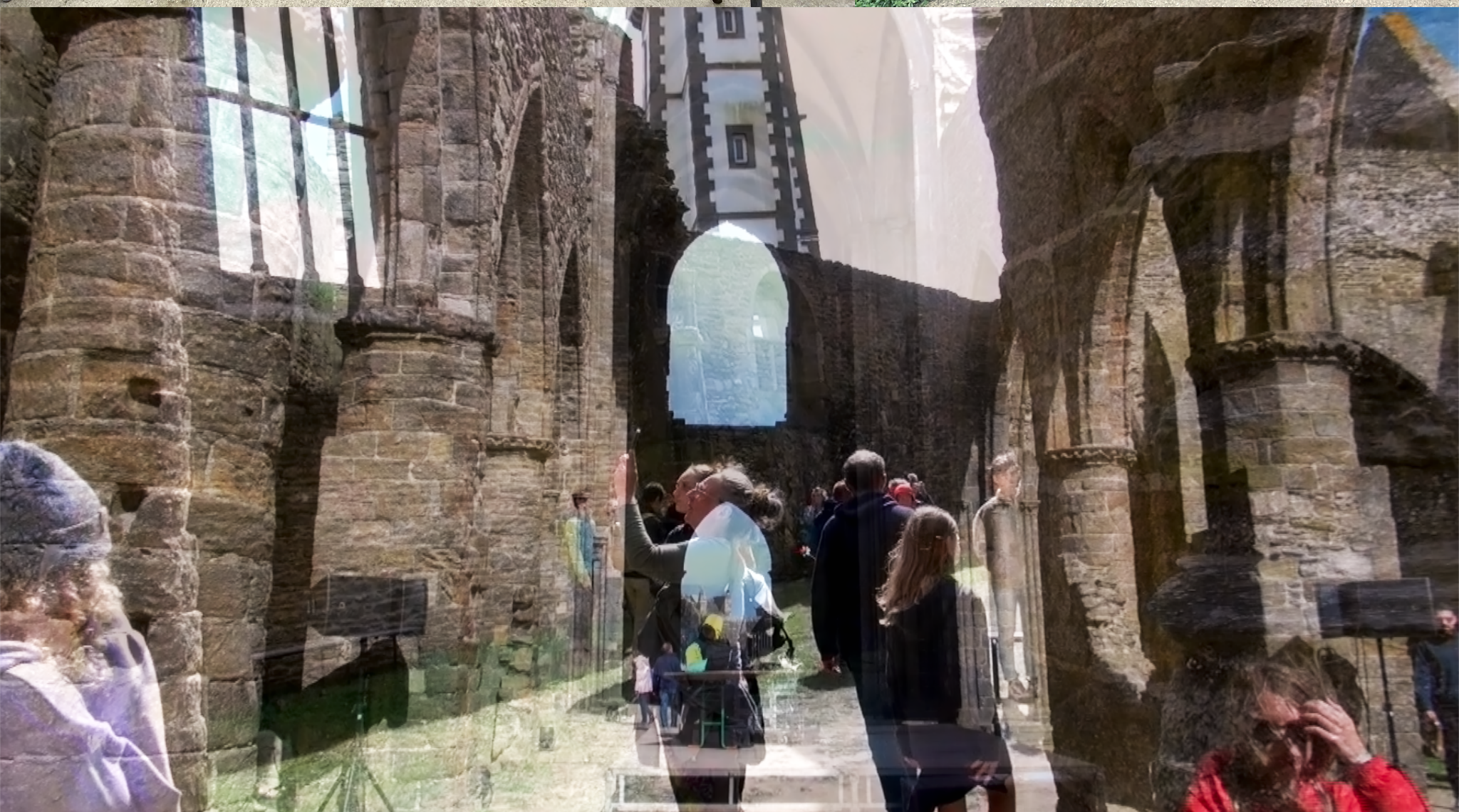
• Commissioned by SACEM

• Co-produced by ACEL / Les Amis de St Mathieu









Association
Les Amis de Saint Mathieu

Samedi 5 août 2023

12h - 23h

Abbaye St Mathieu

Plougonvelin

Fine-Terre

Journée de la création
installation sonore - mise en lumière

conçue et réalisée
par Stéphane de Gérando

sacem

acel

Le Monde

CULTURE • LES ENVIES DU MONDE

Par Sylvain Siclier, Marie-Aude Roux, Franck Colombani et Pierre Gervasoni

EXTRAIT DE LA MATINALE

Cette semaine, nous vous proposons une sélection de festivals qui ont lieu durant les trois premières semaines du mois d'août. Un parcours musical qui vous mènera un peu partout avec du jazz et de la chanson à l'île de Ré, de la musique classique et contemporaine à Deauville, Plougonvelin ou Calenzana, du rock metal à Orange, du jazz encore à Langourla ou à La Petite-Pierre, du piano boogie- woogie à La Roquebrou.

De la musique contemporaine en création immersive sur une falaise du Finistère

Il est des compositeurs qui ne sauraient envisager la musique dans le cadre limité d'une salle de concert. Stéphane de Gérando, né en 1965, en fait partie et ses œuvres, portées par un souffle aussi poétique que philosophique, aspirent à l'infini. Une dizaine d'heures, le 5 août, dans les ruines de l'abbaye de la pointe Saint-Mathieu à Plougonvelin, dans le Finistère, ne seront pas de trop pour se perdre dans le *Labyrinthe du temps*, installation sonore immersive, qui constitue un de ses principaux modes d'expression depuis quelques années. De 12 heures à 23 heures sera diffusée en plein air une musique créée et contrôlée en temps réel par les algorithmes propres au compositeur. Pour clore cette expérience *in vivo*, qui comportera également un panorama de la musique contemporaine avec des œuvres, entre autres, d'Alain Bancquart (dont le concepteur de cet événement hors norme fut l'élève), sera donnée en première audition une pièce de Stéphane de Gérando au titre emblématique, du lieu comme de l'esprit qui devrait y régner face à l'océan : *Fine-Terre*. **P. Gi**



Samedi 5 août 2023
12h - 23h

Abbaye St Mathieu
Plougonvelin

Fine-Terre

Installation sonore et mise en lumière
Journée de la création

Conception /réalisation
Stéphane de Gérando

Site hellasso

Association Les Amis de Saint Mathieu

sacem

acel



FESTIVAL "TOKYO 23 3D SOUND & ART FESTIVAL" WORLD PREMIERE OF THE LABYRINTH A FIRST IN JAPAN

A WORLD PREMIERE IN JAPAN...

World premiere creation of the Labyrinth of Time in Tokyo.

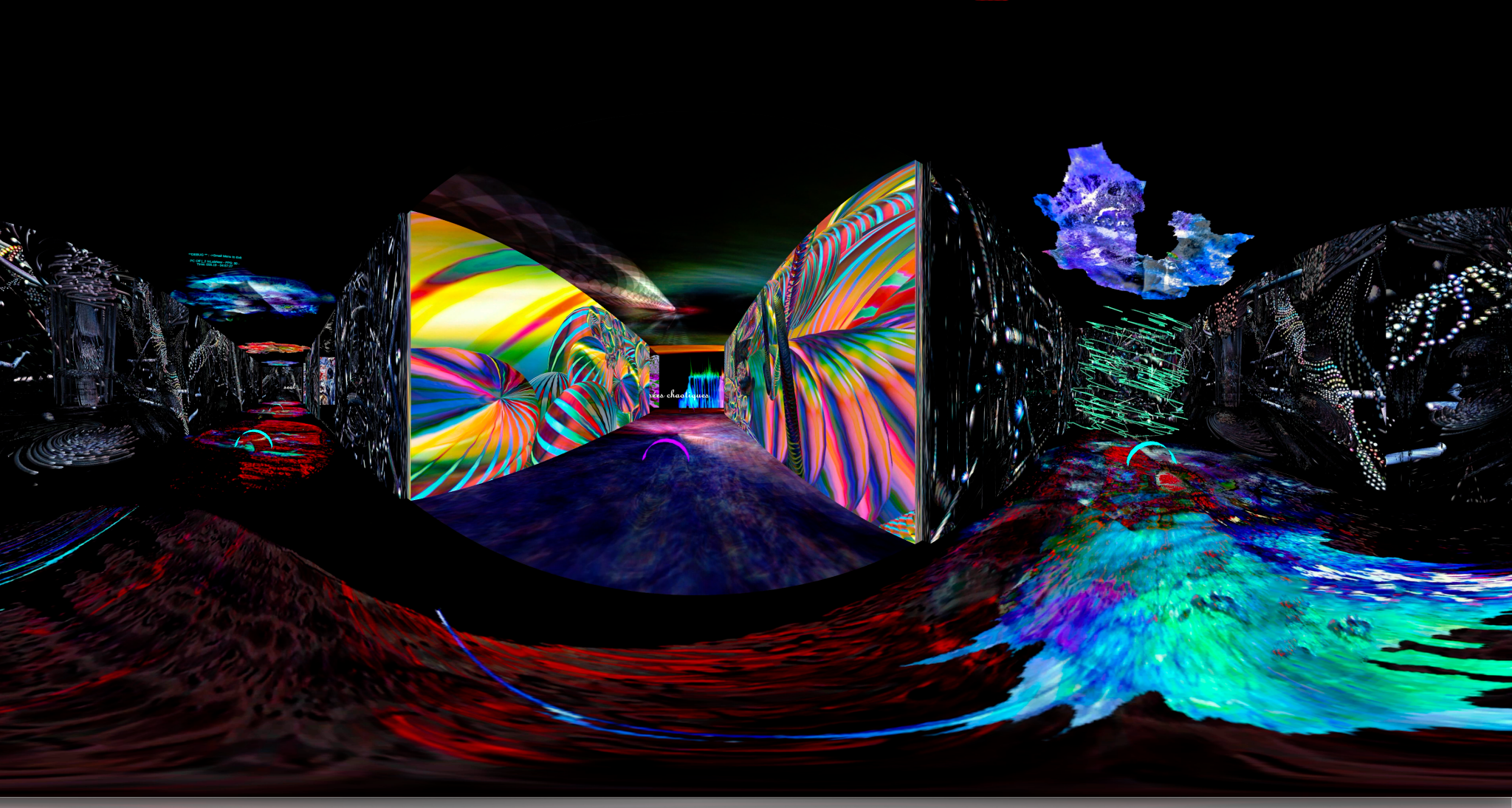
Stéphane de Gérando invited as Guest Composer at the 'TOKYO 23 3D Sound & Art Festival'.

The Labyrinth of Time exhibited and performed with its videos, combined with dance, 3D installation, instrumental works...

12–13 May 2023




Art numérique Sculptures Poésie



ZERO POINT

REALITIES / VIRTUAL LABYRINTHS

IMMERSIVE LDT SATELLITE VIRTUAL REALITY (VR HEADSET) LARGE SCREEN PROJECTION



A fractal figure of the Labyrinth of Time contained within the Labyrinth, in total immersion combined with the

possibility of a large-screen projection for the rest of the audience — dive into the virtual Labyrinth of Time by

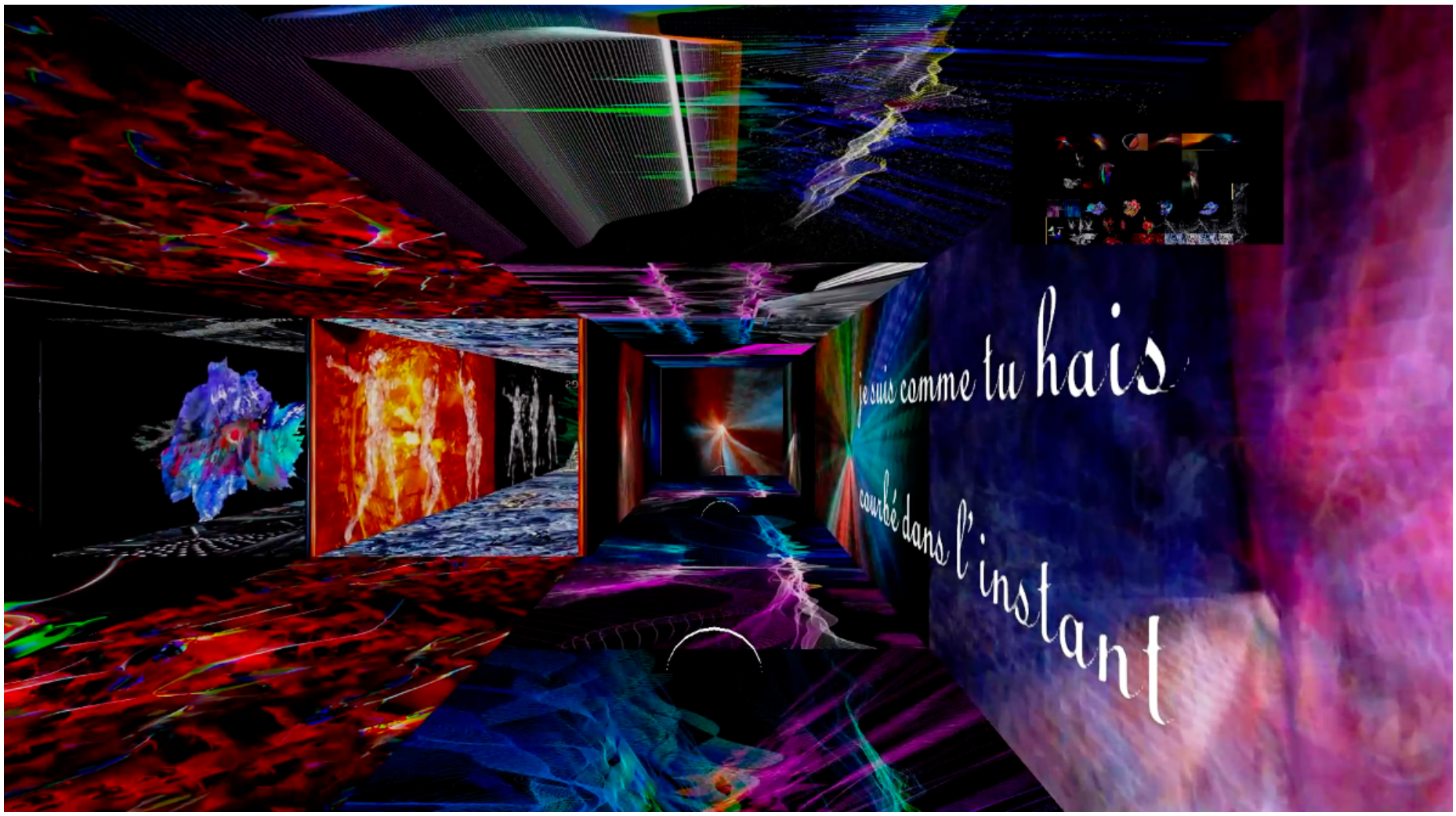
piloting your real-time trajectory via a VR headset: dark rooms, red rooms, outer space, the geodesic dome with

its hundreds of tableaux, the theatre with its floating words, the primordial space of doors, sculptures and music

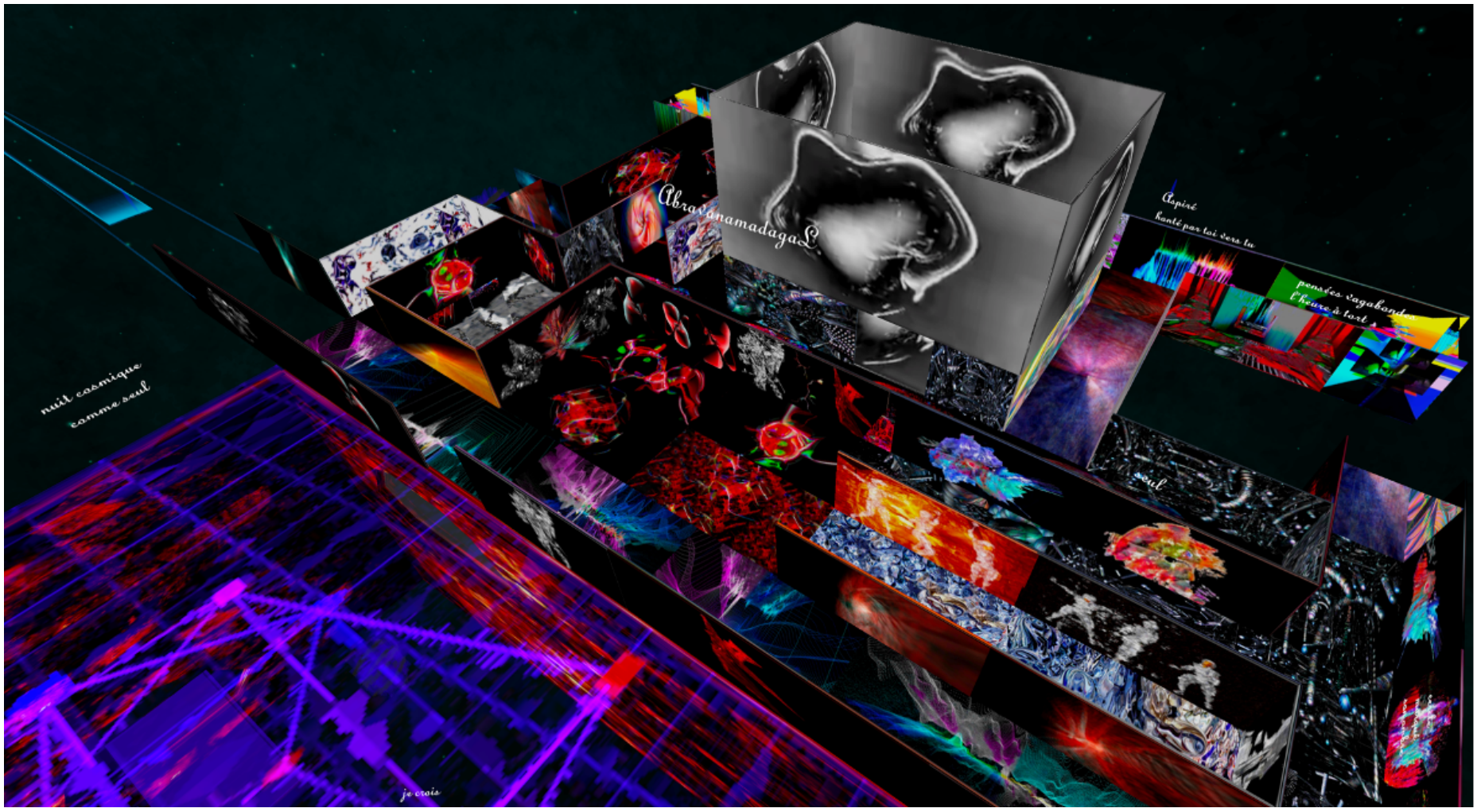
of Zero Point, the labyrinthic heart with its infinite corridors and teleportation, research and pedagogical

aspects... a proliferating symphony of colors, sounds, and forms...

This latest LDT satellite is in development with Gilles Baroin, engineer-doctor, expert in virtual realities — first



Trajectories through the work controlled in real time by the audience with their joysticks — this latest Labyrinth satellite, immersive andinteractive, opens new perspectives: a multidimensional labyrinthic mise en abyme of reality/virtuality.



Le labyrinthe du temps

Stéphane de Gérando





JOURNEY TO THE HEART OF THE LABYRINTH

INTERACTIVE EDUCATIONAL INSTALLATION AUGMENTED REALITY PRESENCES 2023

radiofrance

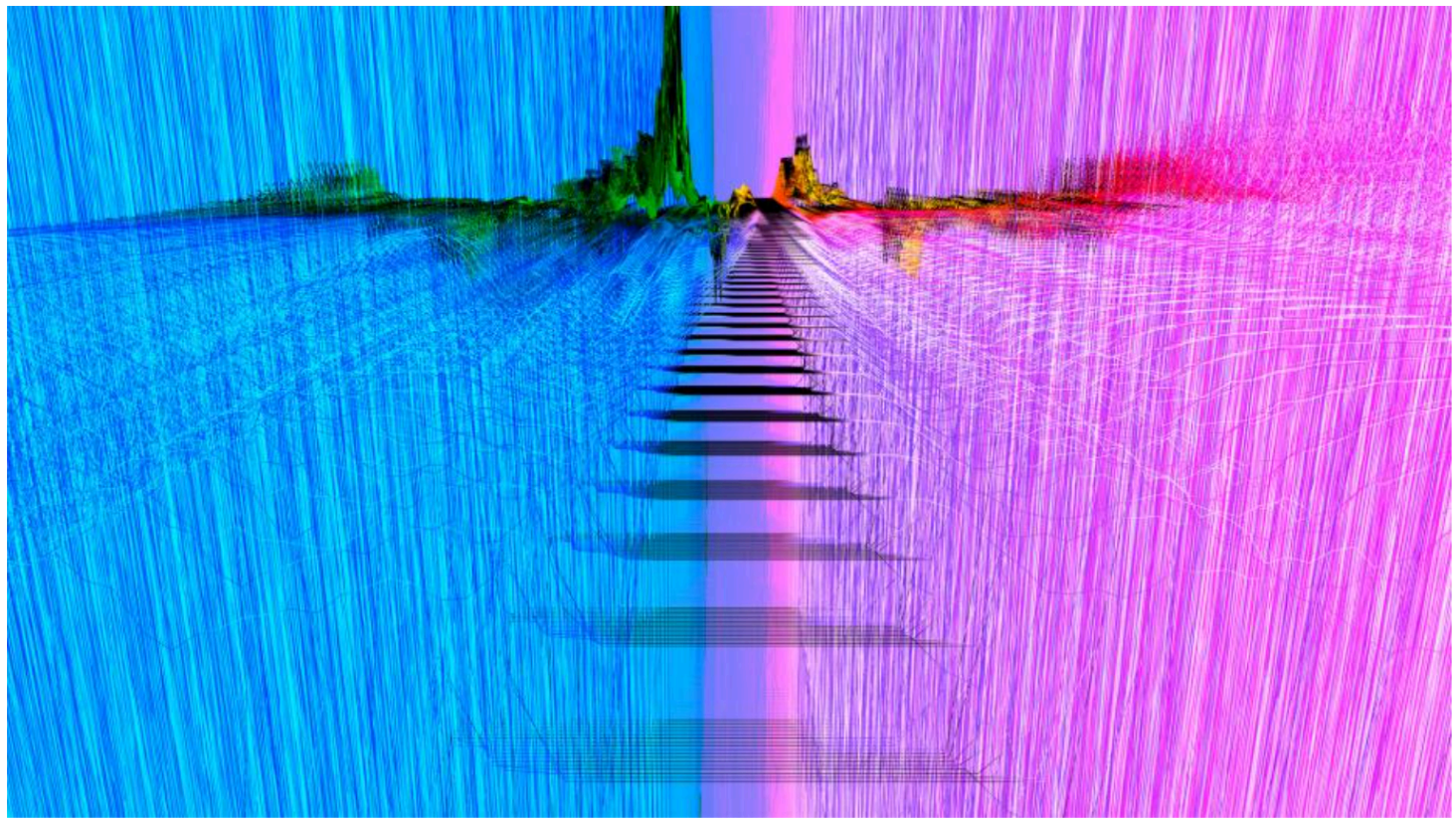
INTERACTIVE DIGITAL WORKSHOPS — WORLD PREMIERE AT RADIO-FRANCE

A world premiere at Radio-France in Paris: the installation of the Labyrinth of Time's interactive digital workshops — creative installation, augmented reality, remote gestural control, facial recognition... Draw irregular or regular curves with your voice by apprehending the notion of timbre, listen to the song of mathematics, understand a program for real-time sound or image transformation, discover auditory and sonic illusions, link algorithmic programming to musical invention, plunge into the history and challenges of contemporary 21st-century creation... a labyrinthic pedagogical trajectory at the audience's choice, or planned and guided 'to measure' according to age and each workshop. Also an opportunity to discover Verticale Mémoire in its version spatialized around the audience — one of the last great electroacoustic cycles of the LDT...

VOYAGE AU CŒUR DU LABYRINTHE

Festival Présences

ATELIER POUR LES SCOLAIRES : **6E-TLE**



MARDI 07 FÉVRIER 2023 - 10H00 — COMPLET
MAISON DE LA RADIO ET DE LA MUSIQUE - AGORA

JEUDI 09 FÉVRIER 2023 - 10H00 — COMPLET
MAISON DE LA RADIO ET DE LA MUSIQUE - AGORA

JEUDI 09 FÉVRIER 2023 - 14H00 — COMPLET
MAISON DE LA RADIO ET DE LA MUSIQUE - AGORA

VENDREDI 10 FÉVRIER 2023 - 10H00 — COMPLET
MAISON DE LA RADIO ET DE LA MUSIQUE - AGORA

Ateliers numériques didactiques, créatifs et interactifs du Labyrinthe du temps

Trois activités peuvent vous être proposées :

1 - Ateliers numériques didactiques du Labyrinthe du temps
Découvrir le son et ses paramètres, dessiner grâce à la voix des courbes, écouter le chant des mathématiques, faire le lien entre programmation algorithmique et invention musicale..., autant de notions proposées pour s'interroger sur l'histoire et les enjeux de la création contemporaine au XXIe siècle.

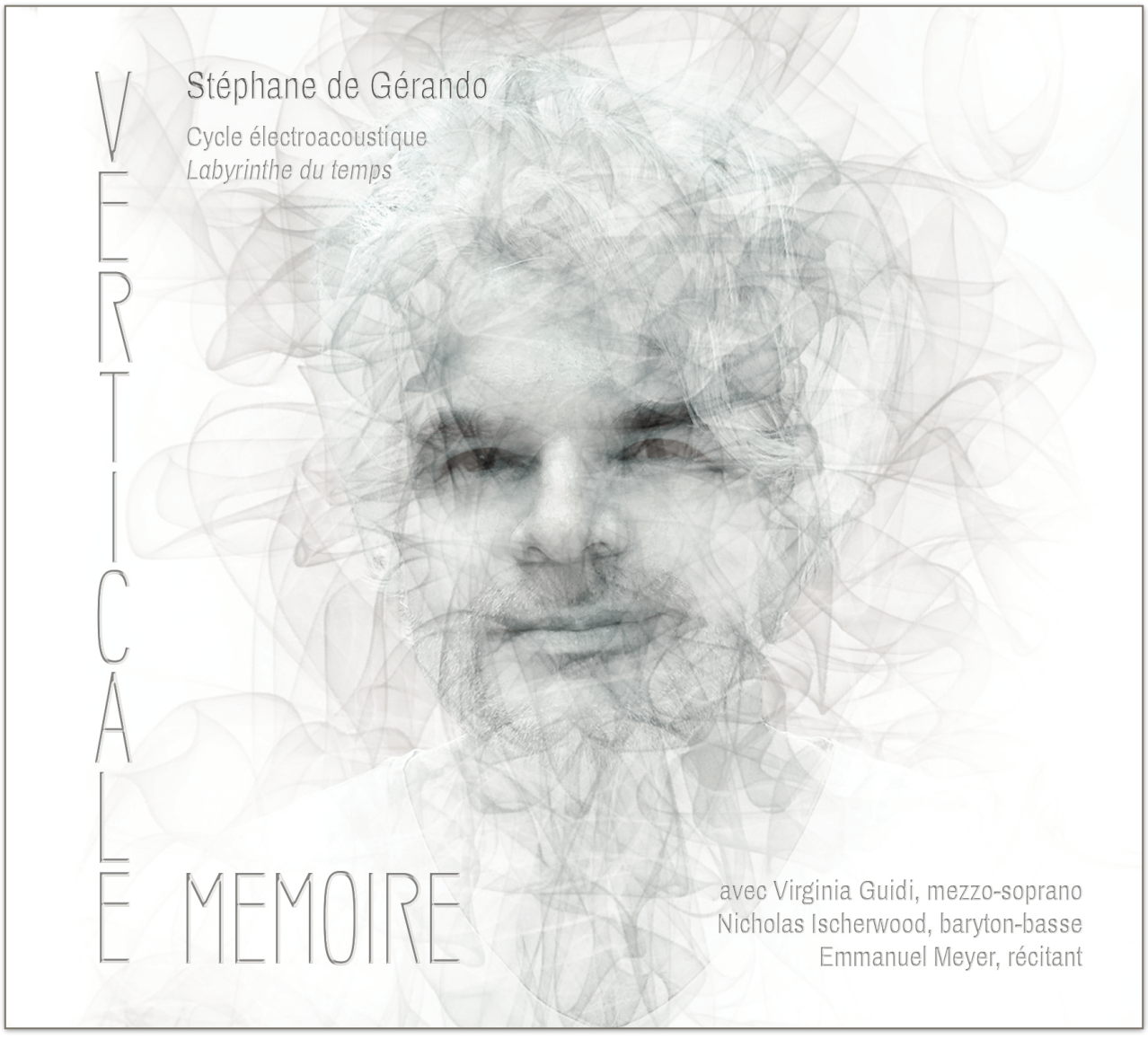
2 - Ateliers créatifs et interactifs du Labyrinthe du temps
Réalité augmentée, contrôle gestuel à distance et reconnaissance faciale, vous inventez votre propre Labyrinthe du temps en pilotant et en interagissant en temps réel avec l'œuvre, aussi bien au niveau du son que de l'image.

3 – Une plongée dans l'œuvre du Labyrinthe du temps de Stéphane de Gérando
Écoute active et moments d'échange avec le compositeur autour d'extraits de l'œuvre.

Ces ateliers sont proposés dans le cadre du Festival Présences 2023.

NIVEAU : 6e / UNIVERSITÉ
DURÉE DE L'ATELIER : 1 ATELIER DE 2H À LA MAISON DE LA RADIO ET DE LA MUSIQUE

Tarif : 120 € / classe



Couverture du disque *Verticale Mémoire* du *Labyrinthe du temps*
(ACEL 2022, durée 1 heure)

«VERTICALE MEMOIRE »

ELECTROACOUSTIC CYCLE

SONIC INSTALLATION 5.1

ALBUM RELEASED ON ACEL IN 2022

PATIALIZED SONIC INSTALLATION

"Rhizomatic mise en abyme of the compositional processes and sonic and visual material, we find in this new cycle Verticale mémoire the double articulation between deferred-time and real-time invention / satellites and large cycle.

Algorithmique grand cycle — the last piece on the disc — was composed 'in the moment' in real time by the main algorithm and recorded simultaneously by the computer. This 'non-reproducible' algorithmic creation is today engraved and fixed in the LDT's memory (the original high-definition sonic version is spatialized in 5.1). This is a first in the history of the Labyrinth."



Interview de Stéphane de Gérando par ACEL,
quai de Seine Paris avril 2022



Virginia Guidi,
mezzo-soprano



Nicholas Isherwood,
Baryton-basse

The shadow of a voice sets the rhythm of this large cycle...

trembling bone that pearls
the hour wrongly
circle vanishing point marked its shadow
Drawn in
haunted by you toward
I am as you hate bent in the instant
fragment raised dry earth of ink
shatters in submerged softness
cosmic night as alone
I believe myself to be
without consciousness or presence
in a flux refusing life
severed vibrant flesh morning evening at zenith
consumes our last prayers, suffocate me
hollow hue closes, presses without limit
tears itself from breath, extinguishes
falters on the lips of your voice
void
without reason
face of your eyes infinite of the gesture that reaches
Verticale mémoire



Emmanuel Meyer dans le théâtre du Labyrinthe





The great underground of the Citadel

«STONE BODY»

HISTORIC MONUMENT FRANCE

COMMISSION: MAPPING AND SPATIALIZED SOUND

2019



MATTER, MEMORY, ILLUSION...

A citadel, an underground passage, a stone wall becomes here an object of writing — both poetic and technical.

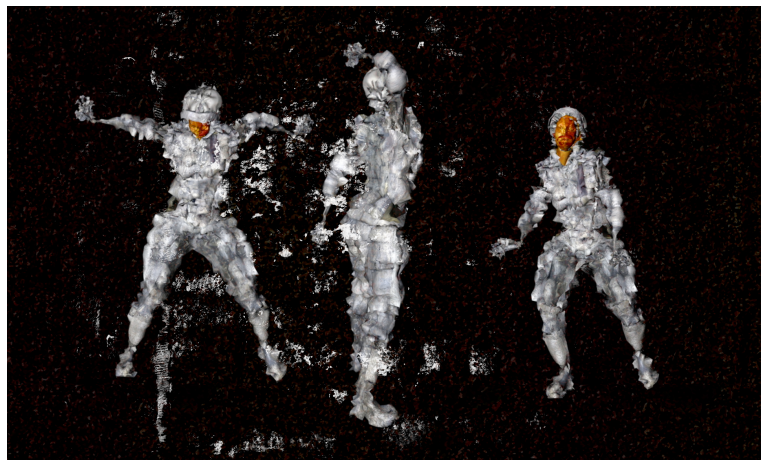
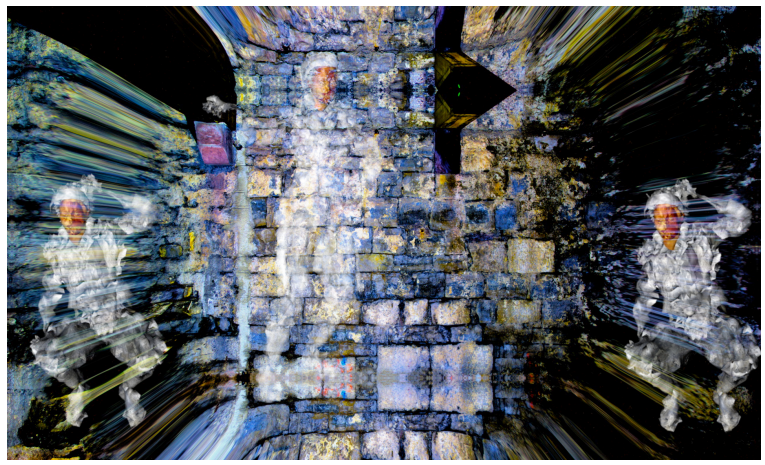
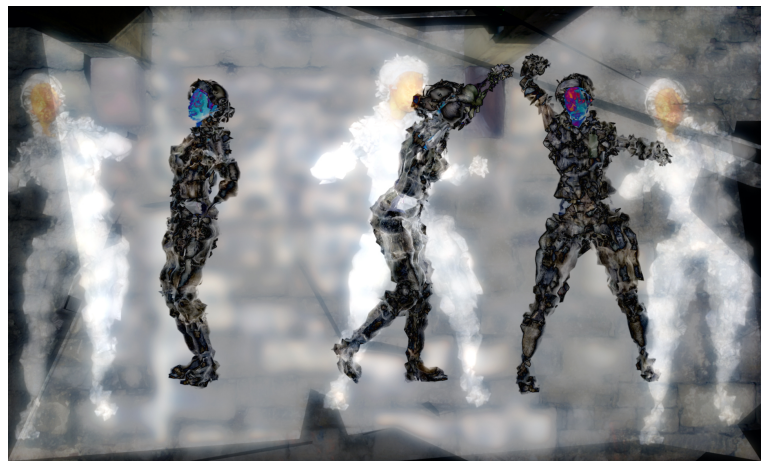
Commissioned by Marc Verdure, Director of the Museums and Citadel of Belfort, installation 1 is a triptych: Mur des Corps (series of fixed images from the Stone Body video), Âmes de Pierre (spatialized sounds), Stone body (high-definition video: images and sounds) (2019).

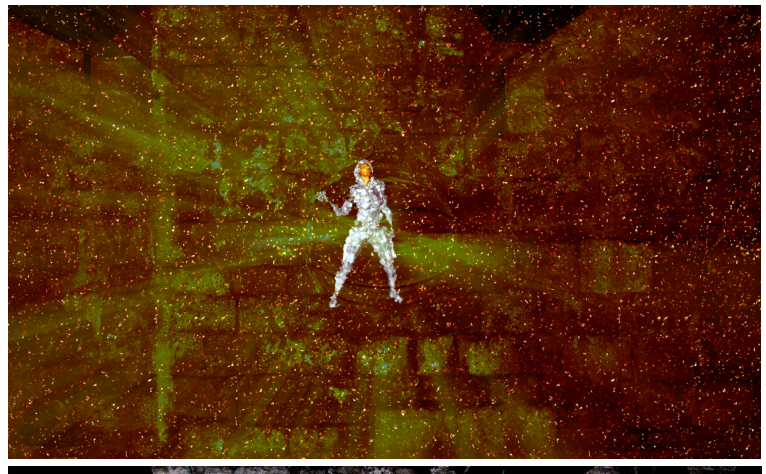
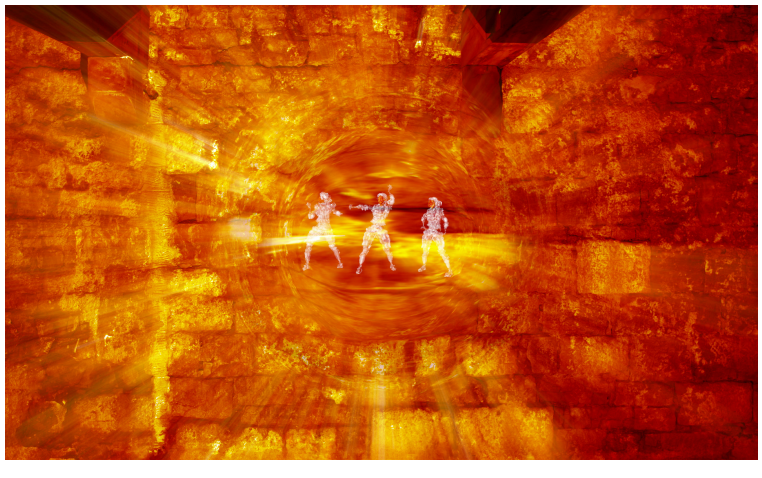
The immensity of this nave prompts the invention of large-scale sonic spaces, just as these 'textured' bodies of the stone walls of the underground passage — mapping playing on illusions that reveal an inhabited space, as if haunted by souls, labyrinthic memories, ephemeral encounters...

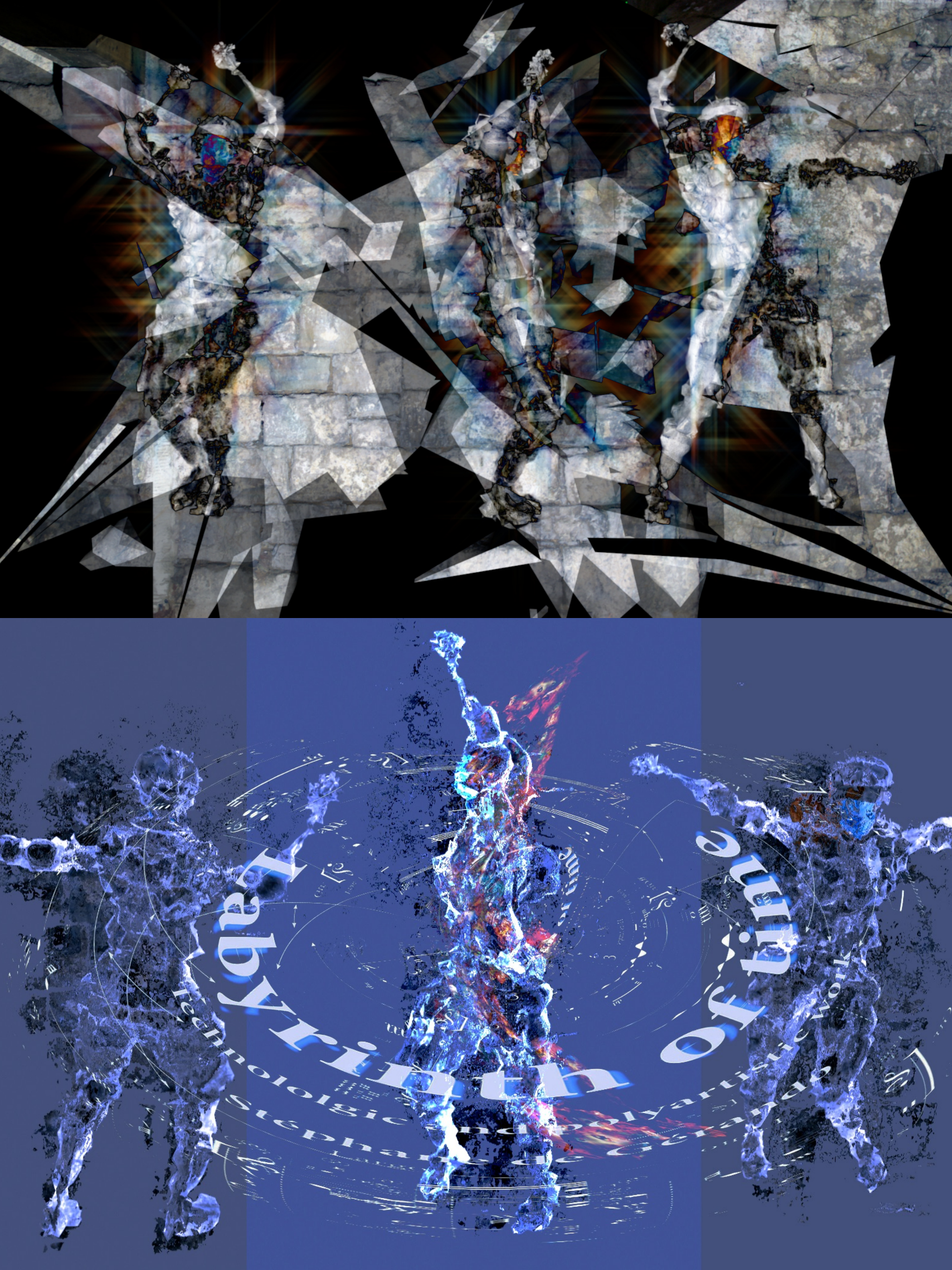
SIMPLE TECHNICAL SETUP

- Laser videoprojector (12,000 lumens minimum),
- One computer,
- Sound card, sound 5.1

ILLUSIONS FROM A WALL OF THE CITADEL



Labyrinth of time
technololgic and polyartistic work
Stéphane de Gérando

STUDY PHASE IN THE GREAT UNDER-GROUND

1. Mapping of spaces: 10 areas

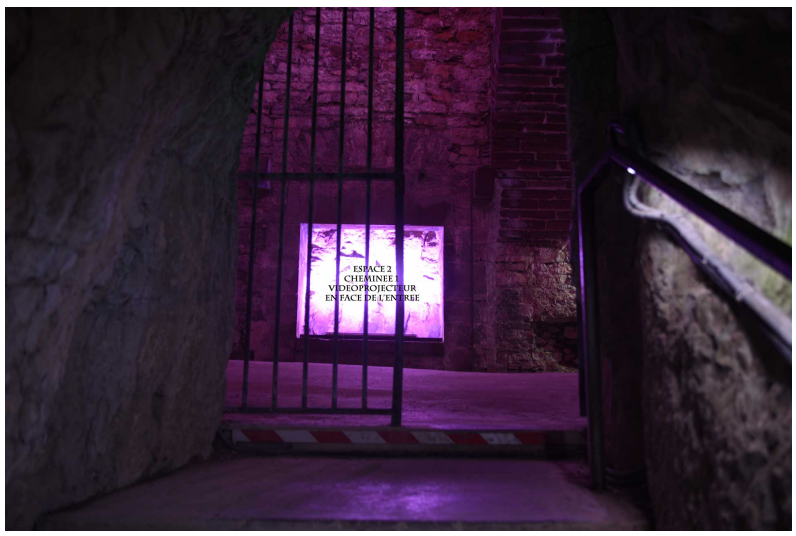
Area 1

Ceiling, upper left of the entrance



Area 2

Fireplace 1, facing the entrance



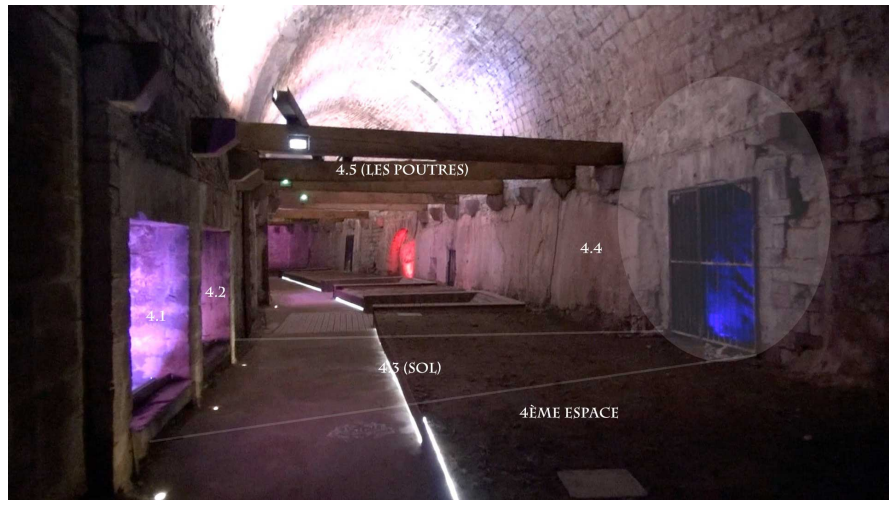
Area 3

3.1 Right wall
3.2 Stone block
3.3 Fireplace 2
3.4 Stone niche
3.5 Staircase



Area 4

4.1 Chimney 3
4.2 Chimney 4
4.3 Floor
4.4 Grille surround – interior
4.5 Beams



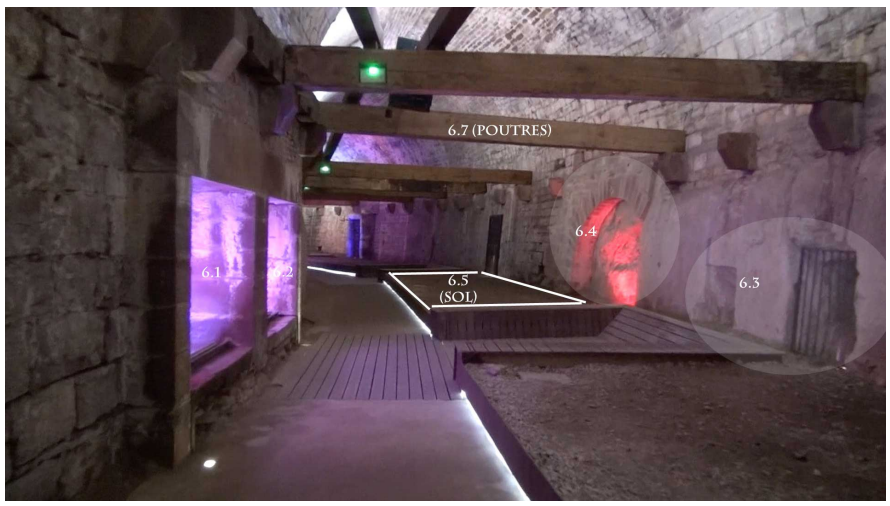
Area 5

5.1 Stone wall
5.2 Opposite wall



Area 6

6.1 Fireplace 5
6.2 Fireplace 6
6.3 Niche surround and grate
6.4 Niche
6.5 Floor
6.6 Beams



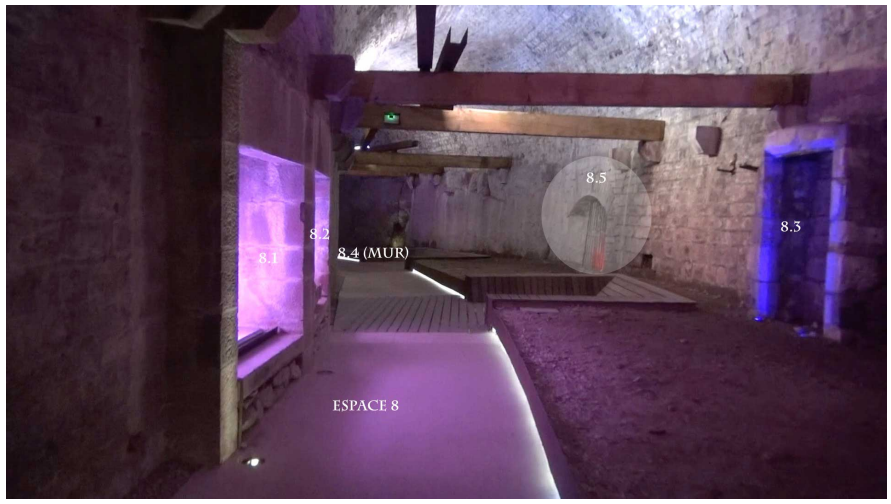
Area 7

7.1 Floor, walls and ceiling (continuous image)
7.2 Grid surround



Area 8

8.1 Fireplace 7
8.2 Fireplace 8
8.3 Niche
8.4 Stone wall
8.5 Grille surround



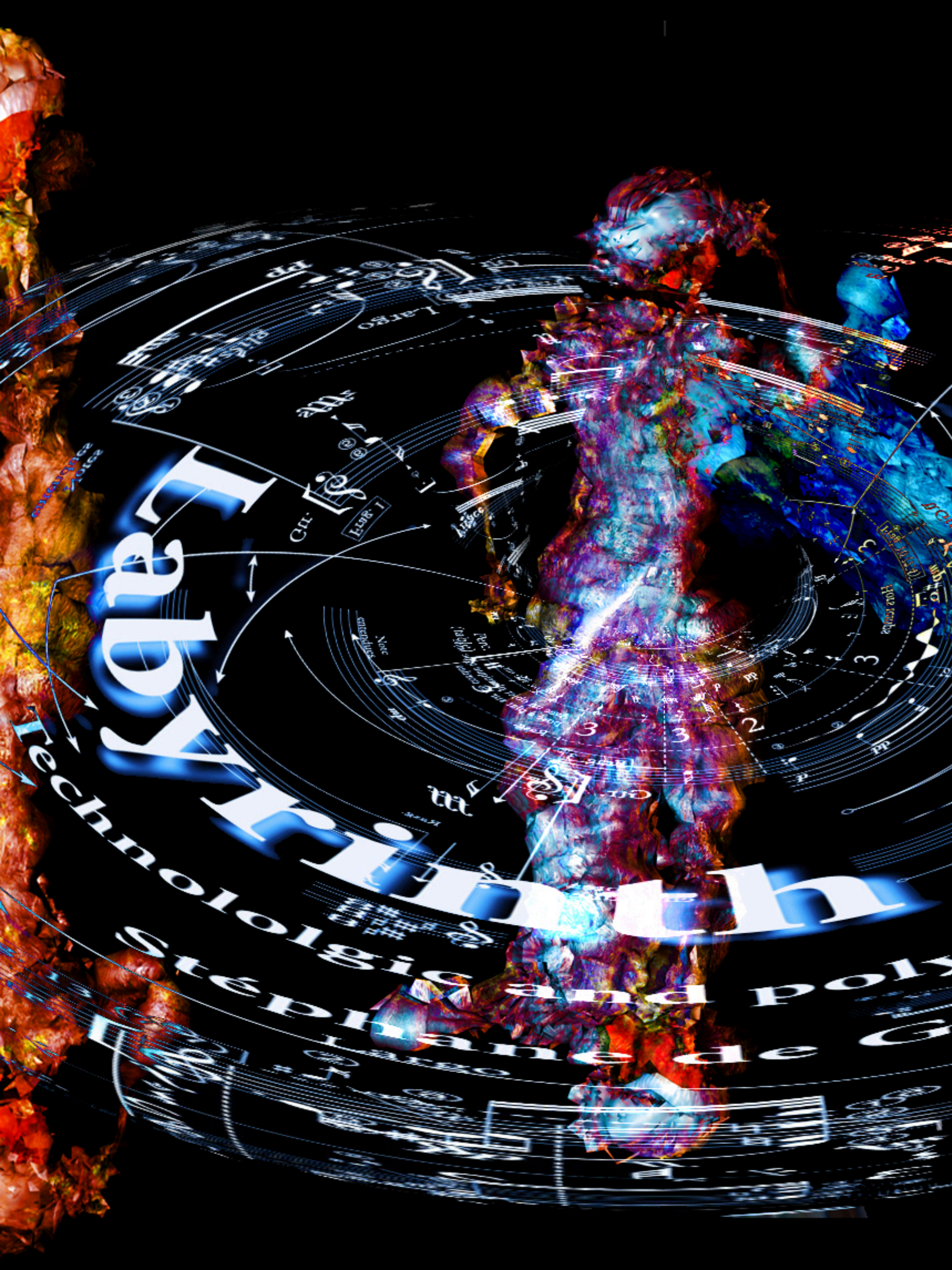
Area 9

9.1 Stone wall
9.2 Fireplace 9
9.3 Fireplace 10



Area 10




Technolologic and poly
Stéphane de G



• Immersive interactive LDT installation over 400 mÇ

• One central control computer for the Labyrinth, accessible to the

audience

• Creation of mixed works with real-time electronics

• Two lateral computers

• Central large screen (with 15,000 lumen laser videoprojector)

• Two lateral screens (10,000 lumens)

• Algorithm projections on the floor (2 laptops and 2 videoprojectors)

• 4 speakers around the audience for spatialized sound, 7 and 8 February

OPEN THE DOORS OF THE LABYRINTH

REAL-TIME INTERACTIVE INSTALLATION AND MIXED WORKS WITH ELECTRONICS



GRAND BELFORT

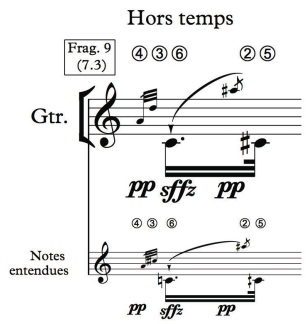


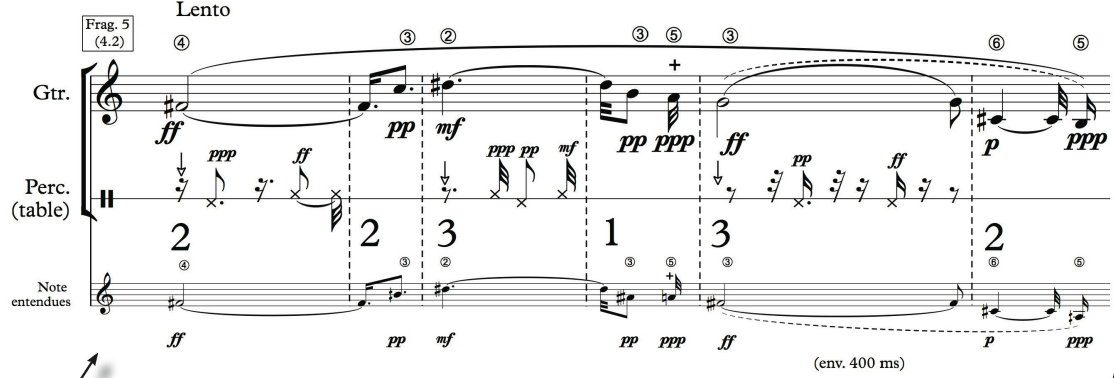


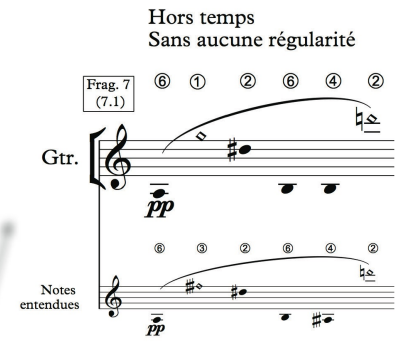


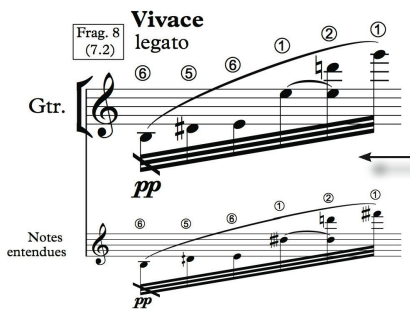


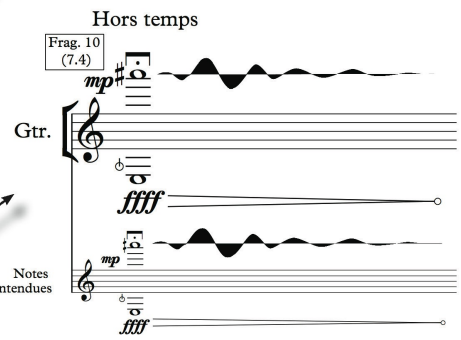
DANS L'INSTALLATION POUR EXEMPLE,
CREATION D'HORIZONS CHAOTIQUES 2 POUR GUITARE ET DISPOSITIF

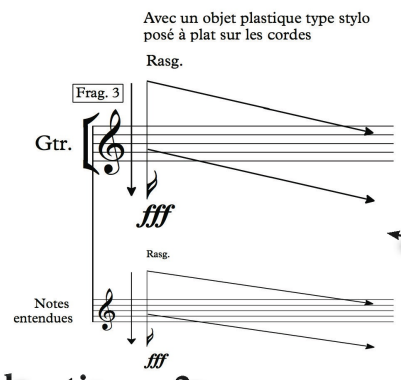


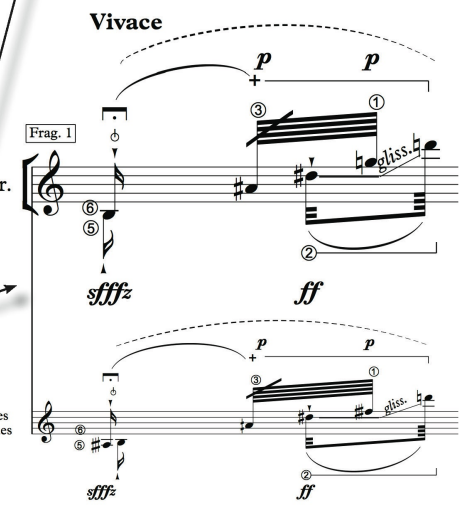






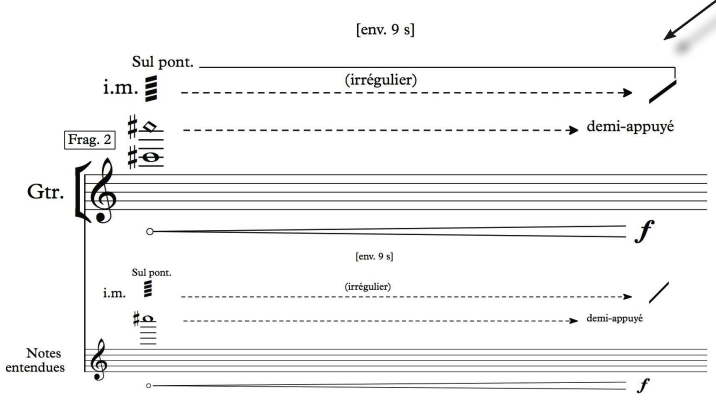


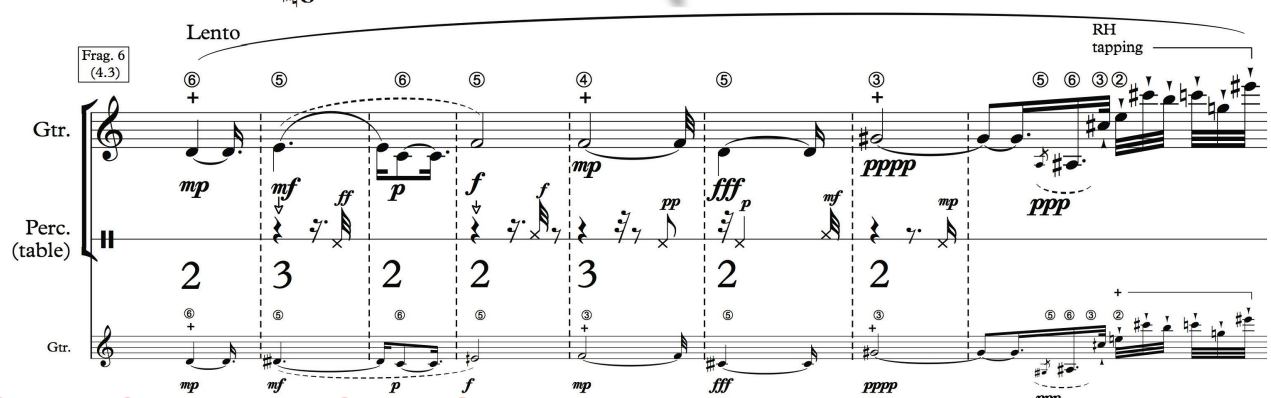


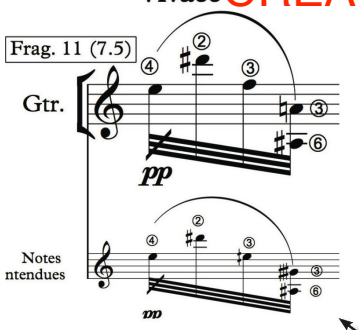


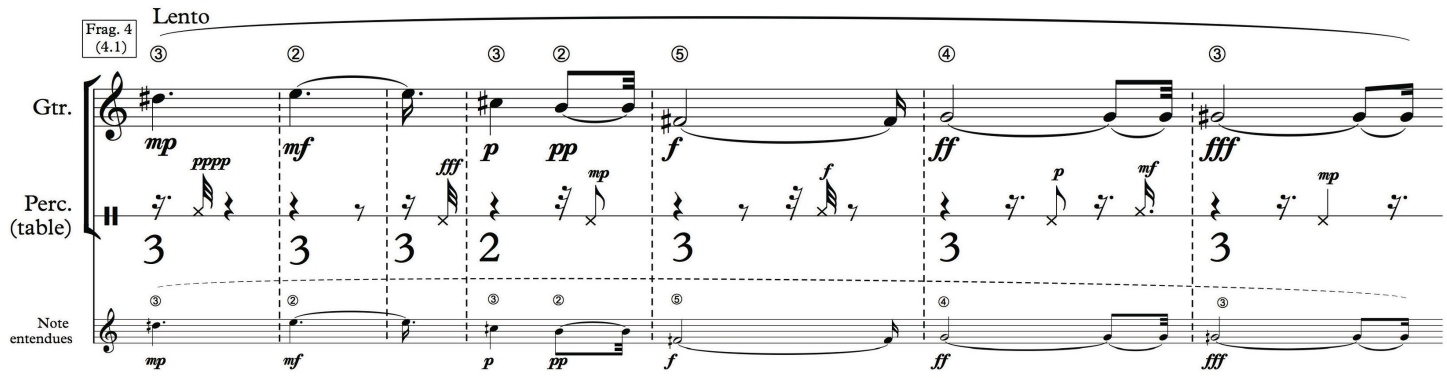
Les horizons chaotiques 2

Stéphane de Gérando
Pour guitare,
électronique temps réel et lecteur de partition imprévisible
(version papier)



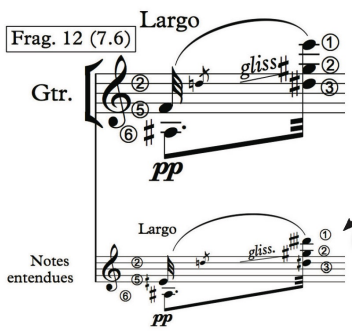


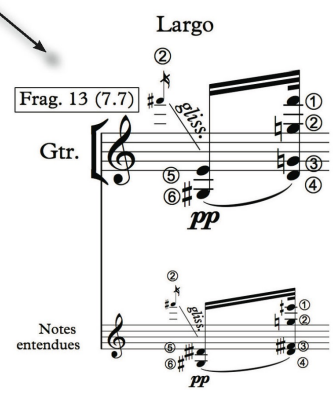


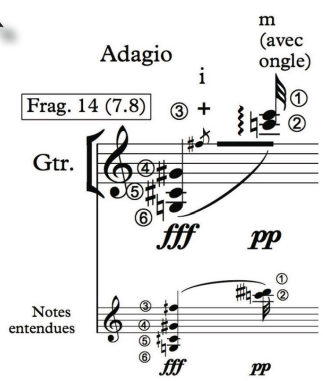


Les horizons chaotiques 2

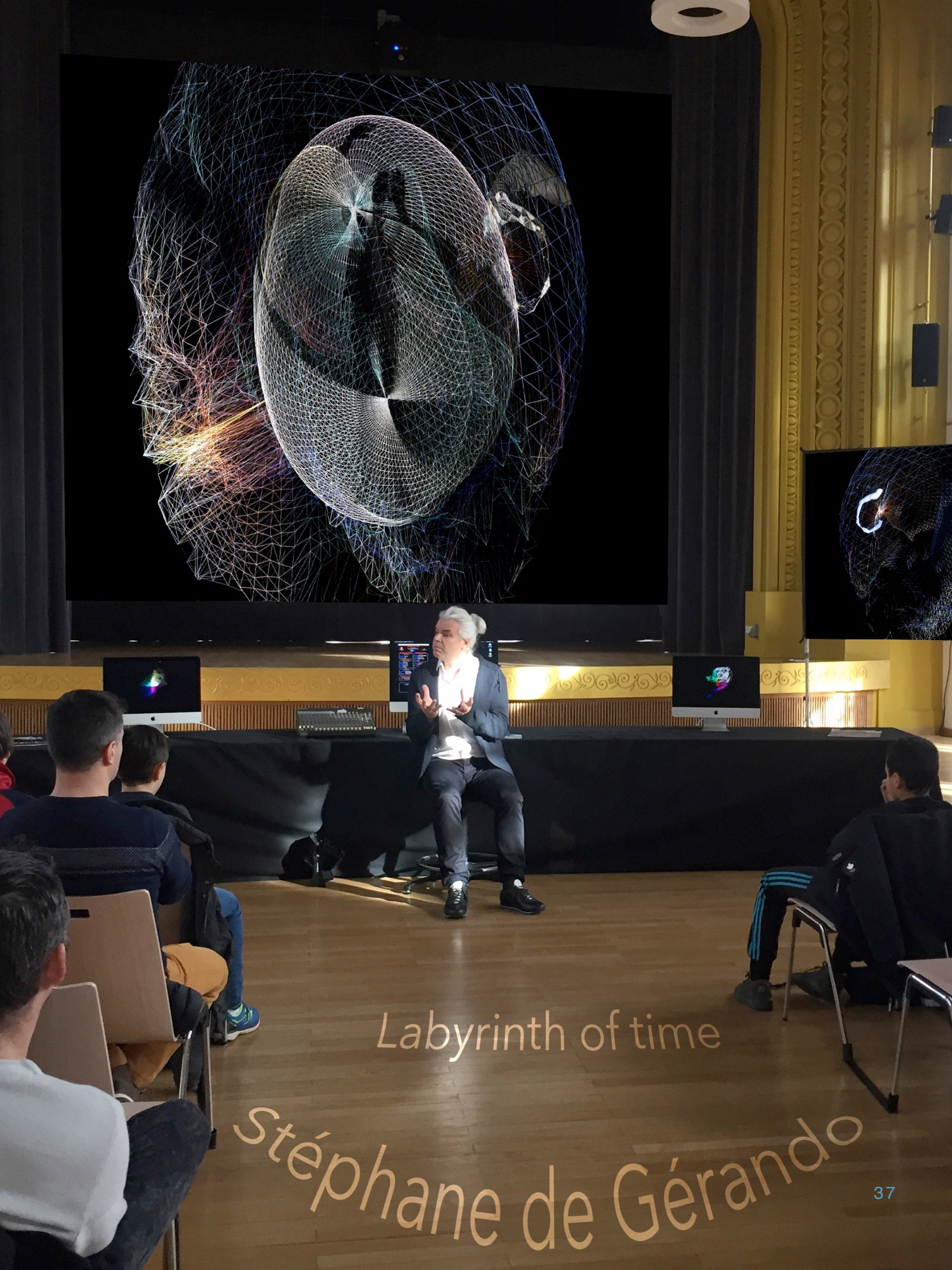
Stéphane de Gérando
Pour guitare,
électronique temps réel et lecteur de partition imprévisible
(version papier)

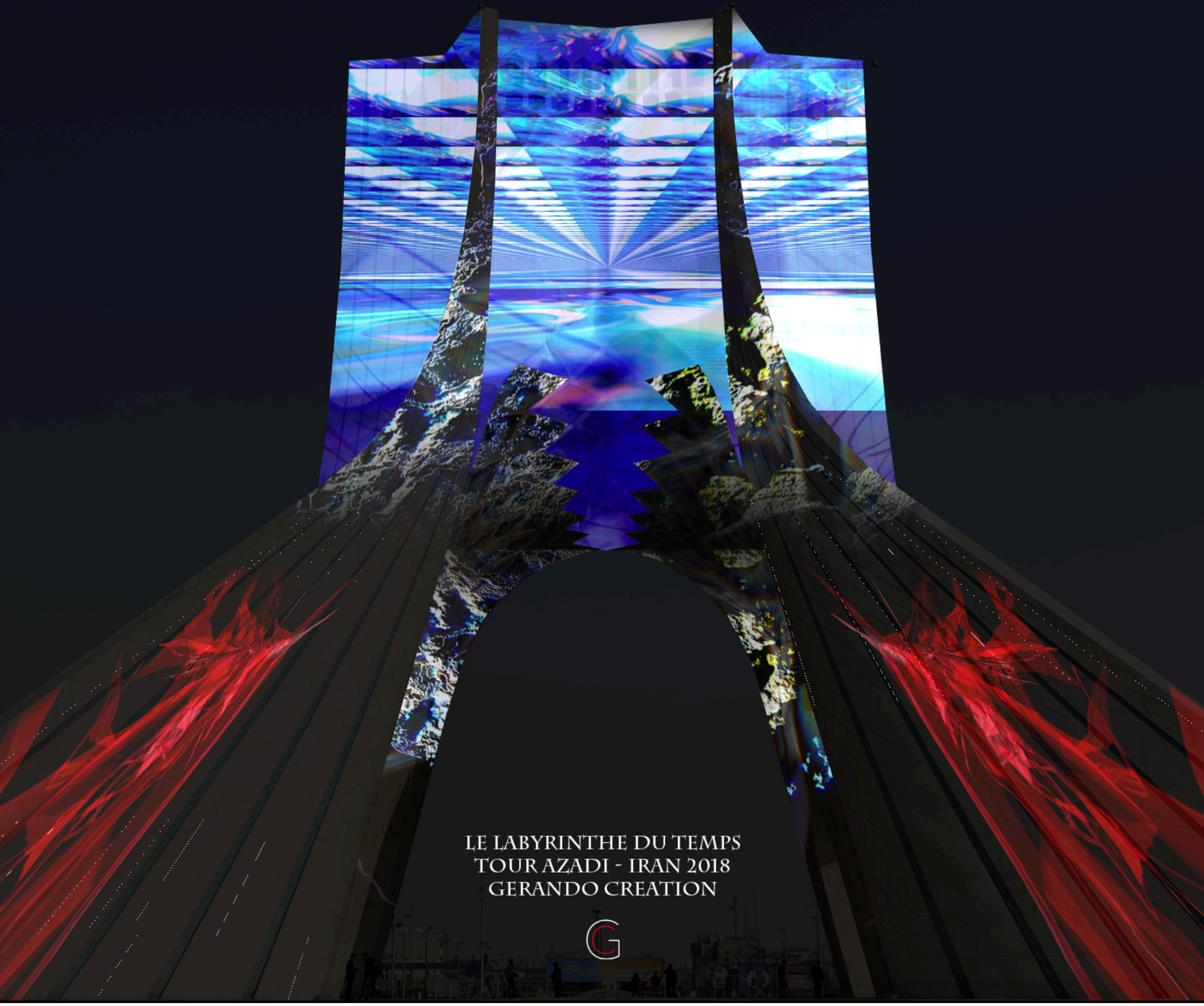









Labyrinth of time
Stéphane de Gérando



Creation of the Labyrinth of Time, monumental mapping, Tour Azadi, Téhéran - Iran 19 juillet 2018

THE LABYRINTH OF TIME IN IRAN

WITH THE SUPPORT OF FRANCE MONUMENTAL MAPPING

• Monumental mapping, creation of the Labyrinth of Time, Azadi Tower in Tehran (Iran), 45 metres high,

5-hectare square, 19 July 2018 from 9:30pm

• 3 videoprojectors of 20,000 lumens, sound spatialized around the audience (12 speakers), PC CPU 7980,

GPU 1080 ti, RAM 64

• 8 TV reports (links online), more than 100 press agency photos, front pages of written press, social networks,



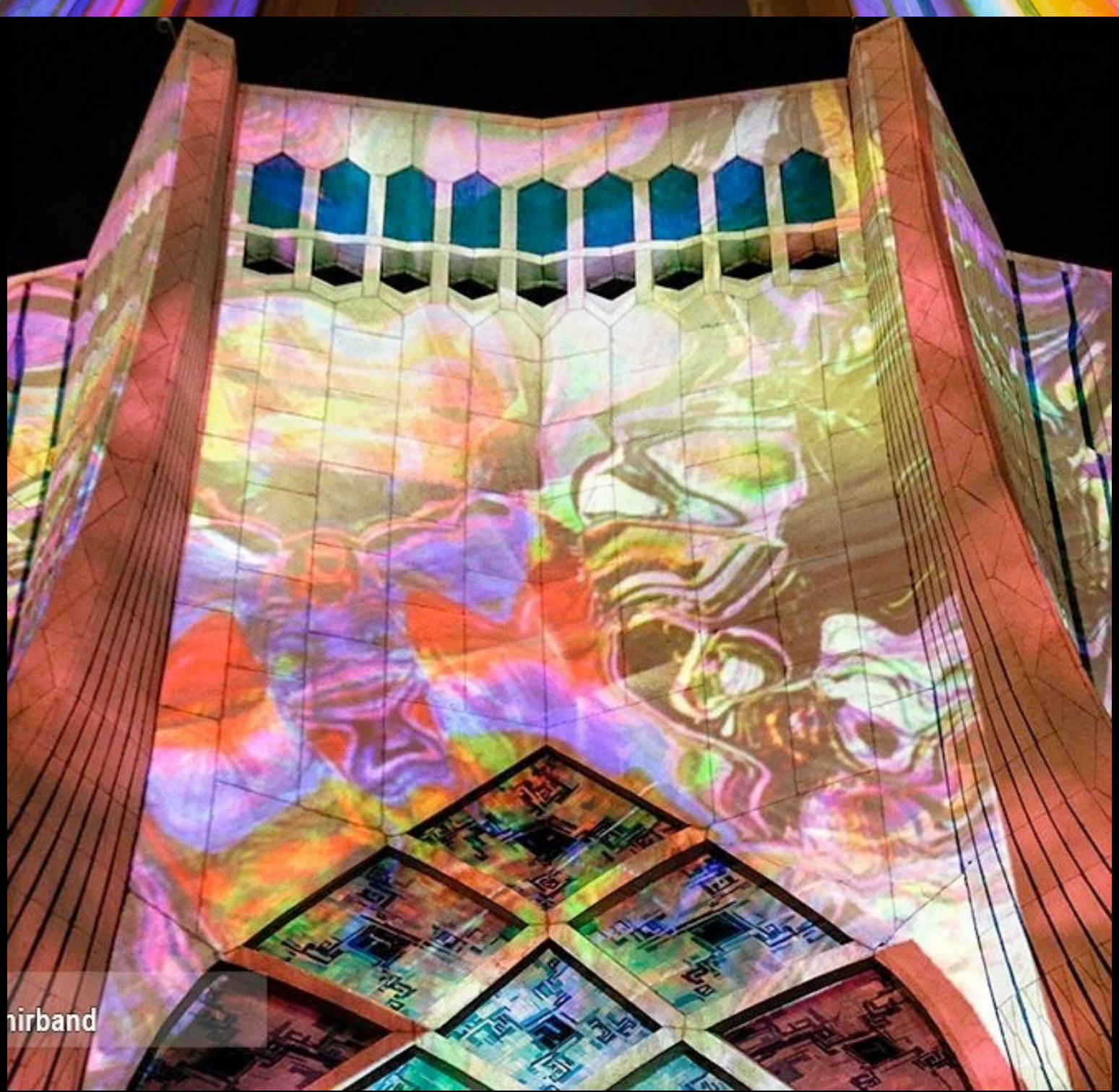


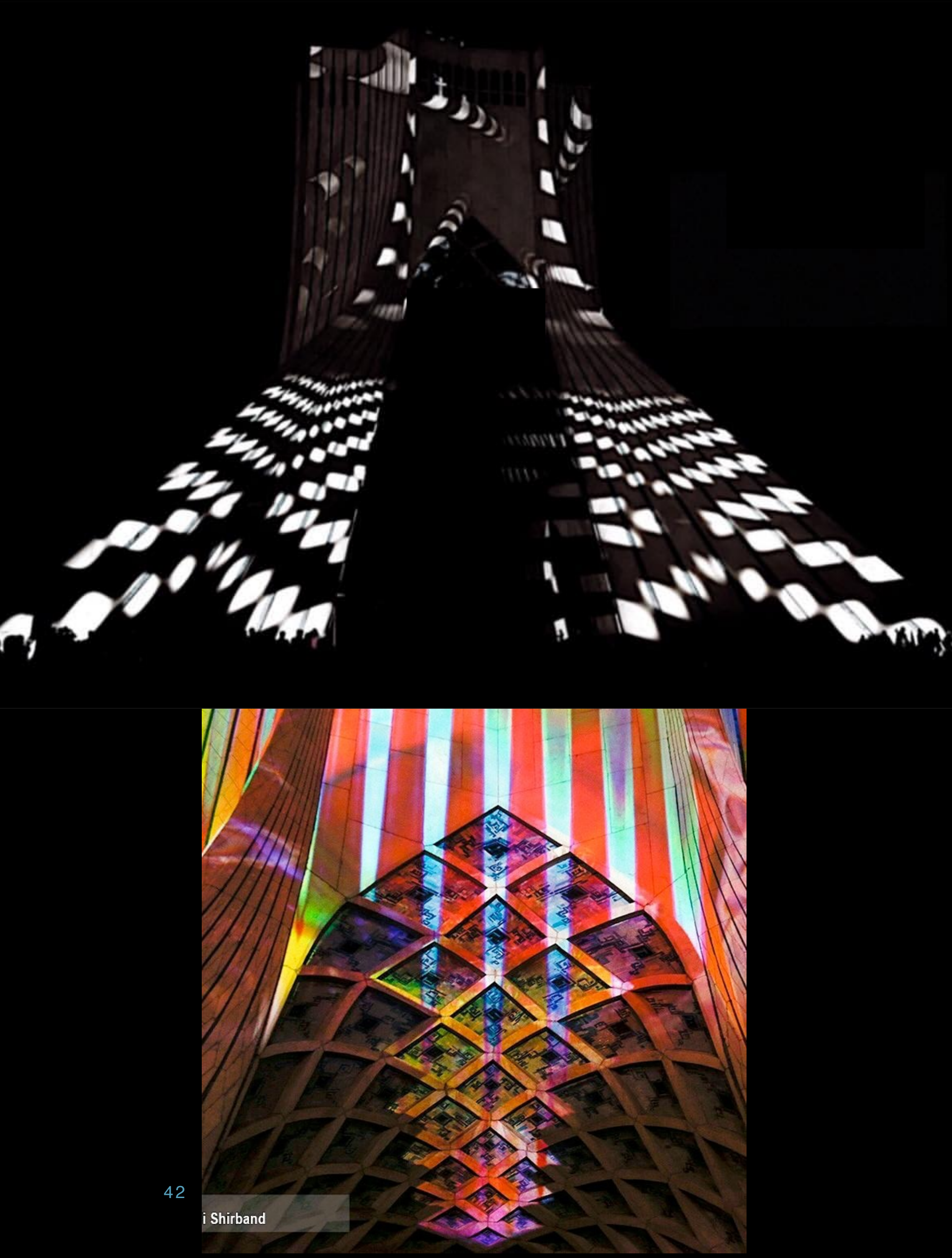


MEHR NEWSAGENCY
Photo: Mohammad Moheimany



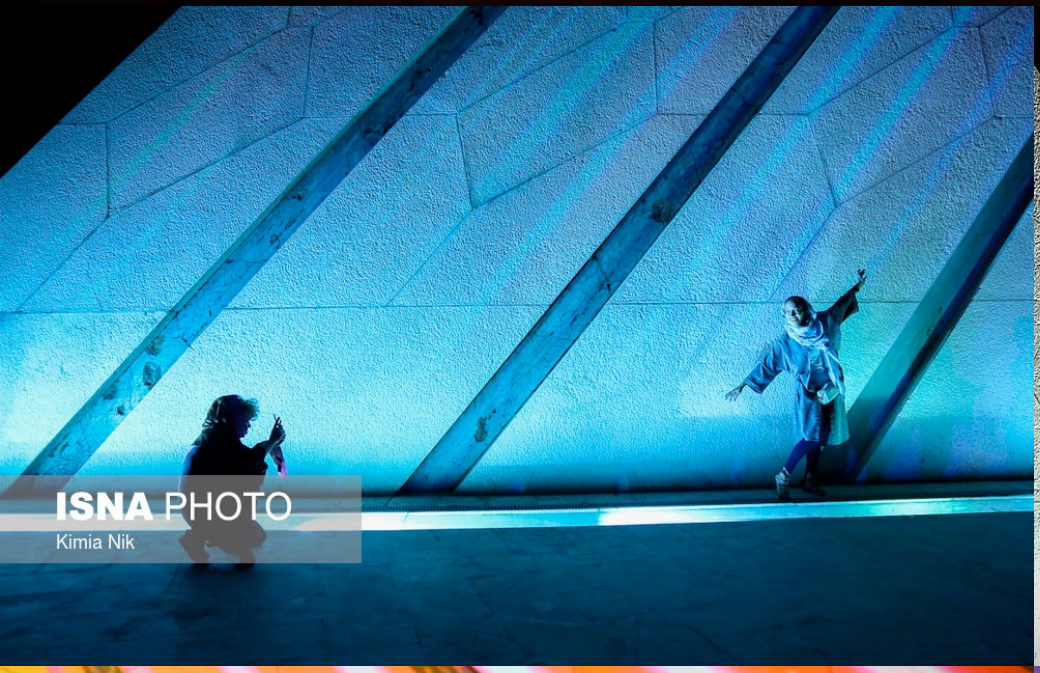
• Mapping monumental, création du labyrinthe du temps, tour Azadi à Téhéran (Iran), 45 mètres de haut, place de 5 hec-

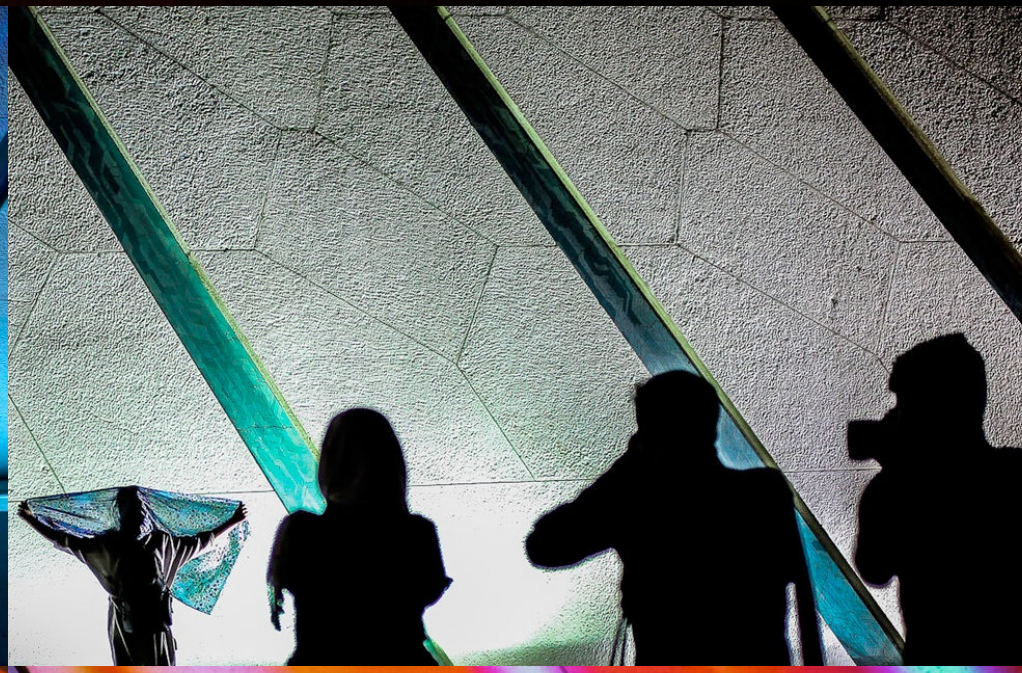




i Shirband




ISNA PHOTO
Kimia Nik




ISNA PHOTO
Kimia Nik


ISNA PHOTO
Kimia Nik


ISNA PHOTO
Kimia Nik
MEHR NEWSAGENCY
hoto: Mohammad Moheimany


ISNA PHOTO
Kimia Nik

Culture - Succès de la projection sur la tour Azadi réalisé avec le soutien de l'ambassade de France en Iran, le 19 juillet 2019

La projection visuelle et sonore de l'artiste français, Stéphane de Gérando a eu lieu le jeudi 19 juillet 2018 en nocturne, en présence du Maire du 9e arrondissement de Téhéran, du directeur du complexe Azadi, des représentants de l'Ambassade de France et de nombreux Téhéranais. Tous ont pu admirer le jeu de lumière et de son, au cours duquel la France a été mise à l'honneur.

La France a apporté son soutien à cette initiative, dans le cadre du projet « Le Labyrinthe du temps », en invitant en Iran M. Stéphane de Gérando. Ce dernier a clôturé son séjour par un mapping spectaculaire, après avoir animé pendant la semaine des ateliers et des conférences à l'Université de Téhéran et au musée de la musique.

Porté en Iran par Karan Salajagheh, compositeur et ancien étudiant de Stéphane de Gérando au conservatoire de Paris, Vedad Famoorzadeh, artiste, et Behjat Kariman, professeure de physique à l'université Azad de Téhéran le projet « Le labyrinthe du temps » allie les arts visuels et la musique tout en s'inscrivant dans une démarche de formation.

Stéphane de Gérando a fondé le Festival de la Création et de l'Innovation. Il est lauréat de plusieurs récompenses du Conservatoire National Supérieur de Musique de Paris en France, et de prix internationaux dont celui du Festival de Darmstadt en Allemagne.



Ambassade de France en iran - Projection sur la tour Azadi

TEHRAN TIMES
Iran's leading International Daily

Stéphane de Gérando to stage projection mapping on Azadi Tower

July 18, 2018 Culture



TEHRAN – The French composer and multimedia artist Stéphane de Gérando is scheduled to stage a projection mapping performance on Tehran's Azadi Tower tonight.

The performance entitled "The Labyrinth of Time and Azadi Tower" will begin at 9 p.m., the Azadi Art and Cultural Complex announced during a press conference on Wednesday.

هزارتوی زمان در تهران

Rencontre avec le compositeur et chercheur français

Stéphane de Gérando



Avec le soutien de l'Ambassade de France en Iran
En collaboration avec l'Ecole de Beaux-Arts de l'Université de Téhéran
New media society et Musée de la Musique d'Iran
با حمایت سفارت فرانسه در ایران
و با همکاری پردیس هنرهای زیبای دانشگاه تهران ،جامعه نیومدیا و موزه موسیقی ایران

دیدار با آهنگساز و محقق فرانسوی

استفان دو ژراندو

معرفی «هزارتوی زمان»

کنفرانس، مسترکلاس اهنگسازی

Introduction au **Labyrinthe du temps**
Conférence, Master class de composition
15 juillet 2018, 9h -18h
Galerie de Téhéran،
Ecole des Beaux-arts, l'Université de Téhéran
Avenue Enqelab,avenue Qods
Côté est Université de Téhéran

۲۴ تیر ۱۳۹۷
ساعت ۹ صبح تا ۶ عصر
نگارخانه تهران،
پردیس هنرهای زیبا،
دانشگاه تهران، خیابان انقلاب، خیابان قدس،
ضلع شرقی دانشگاه تهران

Le labyrinthe du temps à Téhéran

Workshops technologiques
Programmation *MAX-MSP-JITTER*
Stéphane de Gérando
16-17 juillet 2018, 10 h-16 h
Musée de la Musique d'Iran
Avenue Maqsoudbeig, avenue du musée, Tajrish, Téhéran

کارگاههای فناوری
برنامه نویسی با
مکس ام اس پی جیتر
استفان دو ژراندو
۲۵و۲۶تیر ۱۳۹۷، ساعت ۱۰ صبح تا ۴عصر
موزه موسیقی ایران
تهران، تجریش، خیابان مقصودبیک، خیابان موزه

ثبت نام:
inscription:ldtiran2018@gmail.com

Empty Space | Studio





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CONSERVATOIREGRANDBELFORT
GRANDBELFORT.FR
GRAND BELFORT

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CONSERVATOIREGRANDBELFORT
GRANDBELFORT.FR
GRAND BELFORT

COMPLÉTION

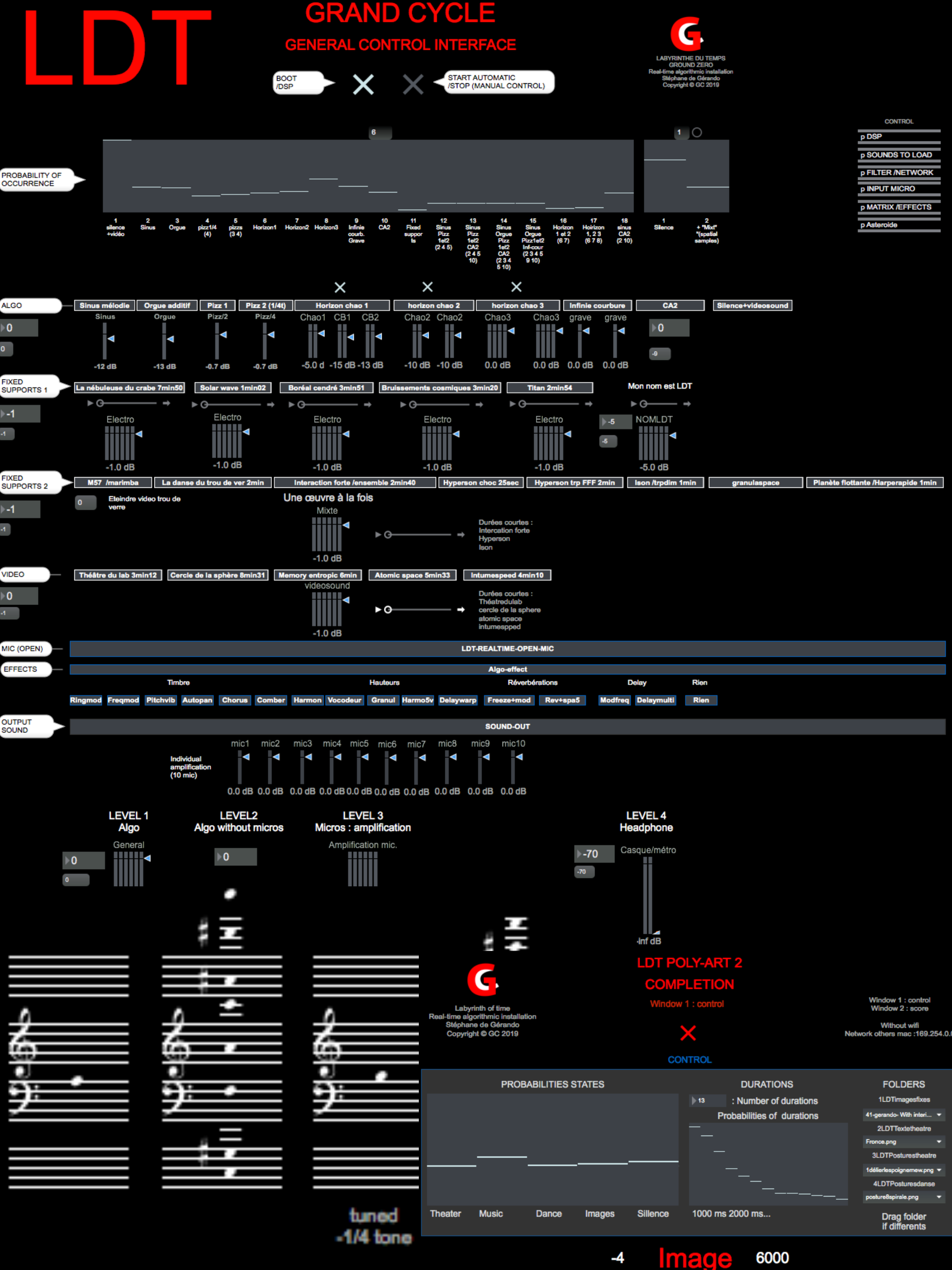
COMMISSION: ENSEMBLE CONFLUENCE 2019



Commission of the Ensemble Confluence — violin, flute, piano, real-time electronics, video and real-time algorithms of the Labyrinth, conferences and creation-concert, 26 March 2019.

Networked computers, virtual scores (musical, textual, gestural, video, silences) and unpredictable real-time sound transformation (labyrinth matrix).

Complétion is a satellite of the Labyrinth of Time — it appears as a frozen moment, flashes or memories of the Labyrinth's videos, a place of memory where space-time collapses, an opening toward possibilities, reinvented relationships and coherences: sound flows into the same logic as an image, a word, a posture... The computer proposes five different playing situations in real time; the performer disposes...

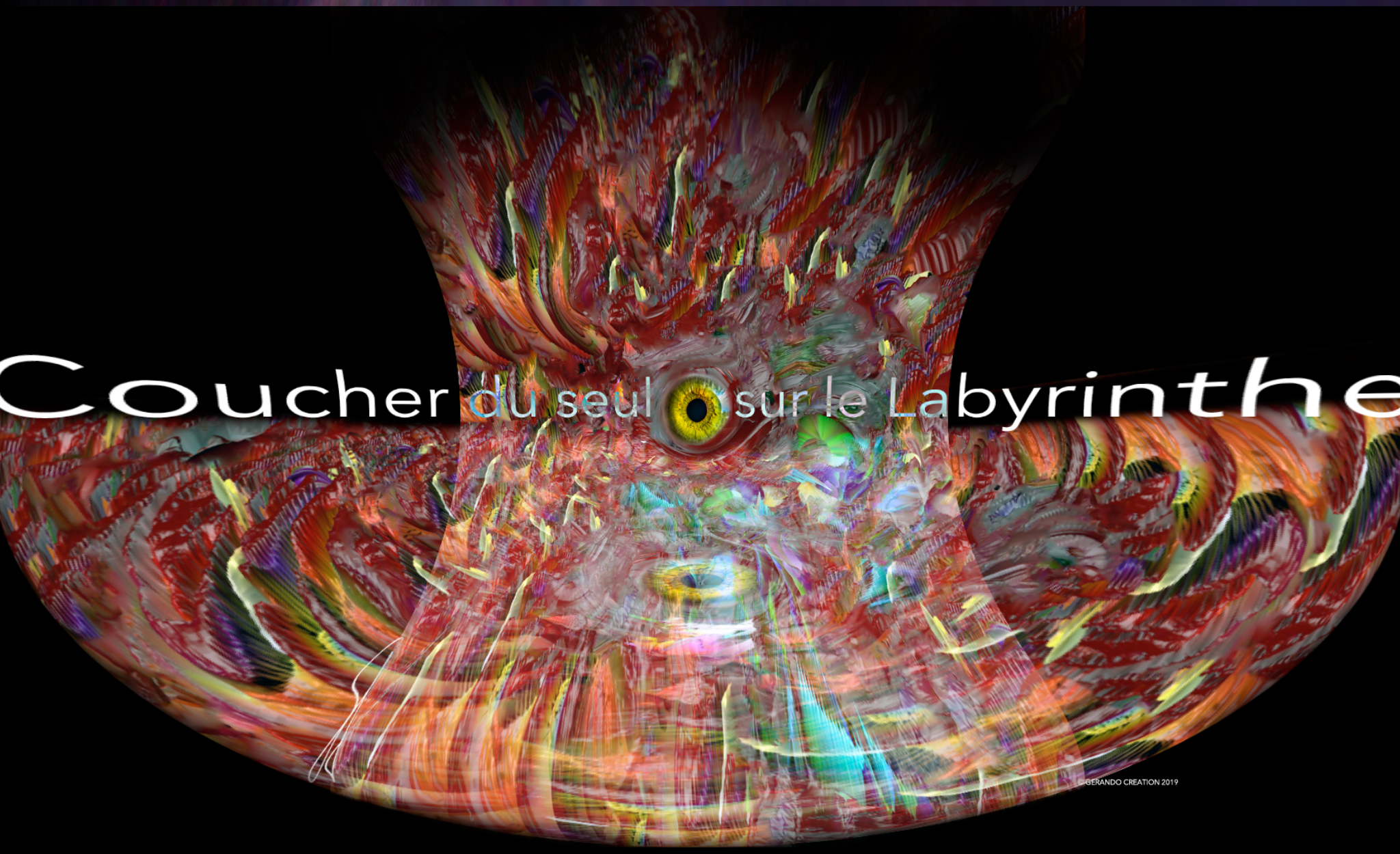


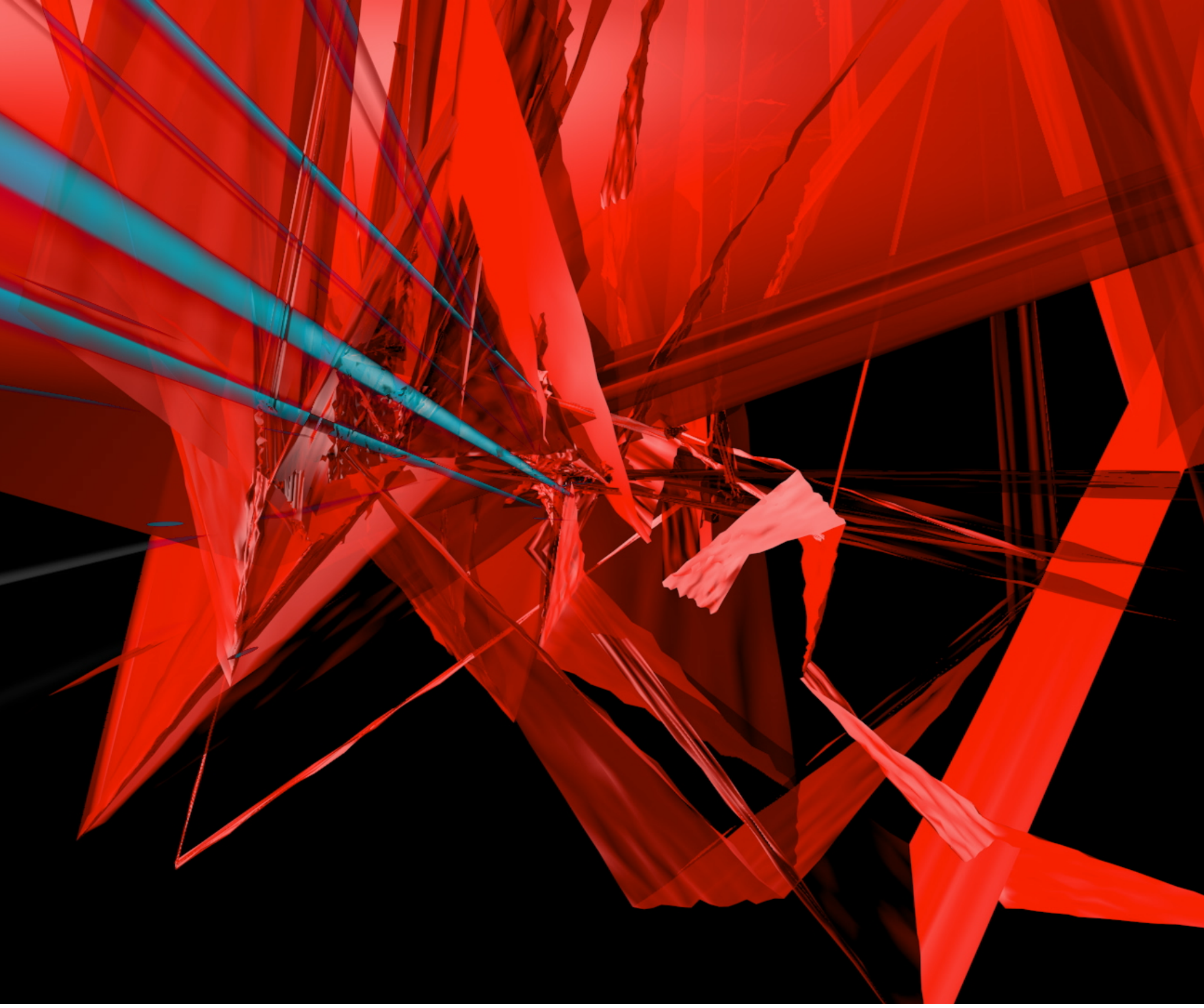
LDT
GRAND CYCLE
GENERAL CONTROL INTERFACE
BOOT /DSP
START AUTOMATIC /STOP (MANUAL CONTROL)
LABYRINTHE DU TEMPS
GROUND ZERO
Real-time algorithmic installation
Stéphane de Gérando
Copyright © GC 2019
CONTROL
p DSP
p SOUNDS TO LOAD
p FILTER /NETWORK
p INPUT MICRO
p MATRIX /EFFECTS
p Asteroide
PROBABILITY OF OCCURRENCE
1 silence +vidéo
2 Sinus
3 Orgue
4 pizz1/4 (4)
5 pizzs (3 4)
6 Horizon1
7 Horizon2
8 Horizon3
9 Infinie courb. Grave
10 CA2
11 Fixed suppor ts
12 Sinus Pizz 1et2 (2 4 5)
13 Sinus Pizz 1et2 CA2 (2 4 5 10)
14 Sinus Orgue Pizz 1et2 CA2 (2 3 4 5 10)
15 Sinus Orgue Pizz1et2 Inf-cour (2 3 4 5 9 10)
16 Horizon 1 et 2 (6 7)
17 Hoirizon 1, 2 3 (6 7 8)
18 sinus CA2 (2 10)
1 Silence
2 + "Mixt" "(spatial samples)
ALGO
Sinus mélodie
Orgue additif
Pizz 1
Pizz 2 (1/4t)
Horizon chao 1
horizon chao 2
horizon chao 3
Infinie courbure
CA2
Silence+videosound
Sinus -12 dB
Orgue -13 dB
Pizz/2 -0.7 dB
Pizz/4 -0.7 dB
Chao1 -5.0 d
CB1 -15 dB
CB2 -13 dB
Chao2 -10 dB
Chao2 -10 dB
Chao3 0.0 dB
Chao3 0.0 dB
grave 0.0 dB
grave 0.0 dB
FIXED SUPPORTS 1
La nébuleuse du crabe 7min50
Solar wave 1min02
Boréal cendré 3min51
Bruissements cosmiques 3min20
Titan 2min54
Mon nom est LDT
Electro -1.0 dB
Electro -1.0 dB
Electro -1.0 dB
Electro -1.0 dB
Electro -1.0 dB
NOMLDT -5.0 dB
FIXED SUPPORTS 2
M57 /marimba
La danse du trou de ver 2min
Interaction forte /ensemble 2min40
Hyperson choc 25sec
Hyperson trp FFF 2min
Ison /trpdim 1min
granulaspace
Planète flottante /Harperapide 1min
Eteindre video trou de verre
Une œuvre à la fois
Mixte -1.0 dB
Durées courtes : Intercation forte Hyperson Ison
VIDEO
Théâtre du lab 3min12
Cercle de la sphère 8min31
Memory entropic 6min
Atomic space 5min33
Intumespeed 4min10
videosound -1.0 dB
Durées courtes : Théatredulab cercle de la sphere atomic space intumespped
MIC (OPEN)
LDT-REALTIME-OPEN-MIC
EFFECTS
Algo-effect
Timbre
Hauteurs
Réverbérations
Delay
Rien
Ringmod
Freqmod
Pitchvib
Autopan
Chorus
Comber
Harmon
Vocodeur
Granul
Harmo5v
Delaywarp
Freeze+mod
Rev+spa5
Modfreq
Delaymulti
Rien
OUTPUT SOUND
SOUND-OUT
Individual amplification (10 mic)
mic1 0.0 dB
mic2 0.0 dB
mic3 0.0 dB
mic4 0.0 dB
mic5 0.0 dB
mic6 0.0 dB
mic7 0.0 dB
mic8 0.0 dB
mic9 0.0 dB
mic10 0.0 dB
LEVEL 1 Algo
General
LEVEL2 Algo without micros
LEVEL 3 Micros : amplification
Amplification mic.
LEVEL 4 Headphone
Casque/métro
-inf dB
Labyrinth of time
Real-time algorithmic installation
Stéphane de Gérando
Copyright © GC 2019
LDT POLY-ART 2
COMPLETION
Window 1 : control
CONTROL
Window 1 : control
Window 2 : score
Without wifi
Network others mac :169.254.0.
PROBABILITIES STATES
Theater
Music
Dance
Images
Sillence
DURATIONS
: Number of durations
Probabilities of durations
1000 ms 2000 ms...
FOLDERS
1LDTimagesfixes
41-gerando- With interi...
2LDTTextetheatre
Fronce.png
3LDTPosturestheatre
1délierlespoignemew.png
4LDTPosturesdanse
posture8spirale.png
Drag folder if differents
tuned -1/4 tone
-4
Image
6000





PHOTOS OF THE COMPLÉTION CREATION
SOUND BECOMES GESTURE (POSTURE), IMAGE, TEXT...


Coucher du seul sur le Labyrinthe
©GERANDO CREATION 2019



Creation of LDT cycle 8, installation at Gantner contemporary art center, April–June 2017

GANTNER CONTEMPORARY ART CENTER LDT

INSTALLATION COMPUTER CONTROLLED

• Installation — videoprojection with sound spatialized around the audience, entirely controlled by an algorithm

(computer).

• Exhibition 'Le chant des terres', installation — creation of cycle 8 of the Labyrinth of Time, exhibition curator

Sylvie Perrin, Gantner multimedia art center in Bourogne — 2-month installation, from 8 April 2017 to 10 June 2017.

MATERIEL

• 1 latest-generation computer (Mac or PC), 16 MB RAM

• RME Fireface 802 sound card (at least four outputs)

• 4 professional loudspeakers

• Barco 1920Å~1080 HDMI videoprojector or professional large screen

(Sony type)

• MAX-MSP-JITTER software, free download:

https://cycling74.com/products/max/

Other: benches, so the audience can also be seated.

SUPPORT

On a 200 GB hard drive, with a simple, immediately usable control interface (images in high-definition Apple ProRes 422 HQ, 1920Å~1080; sound in 5.1 at 24-bit 48 kHz).

This drive contains:

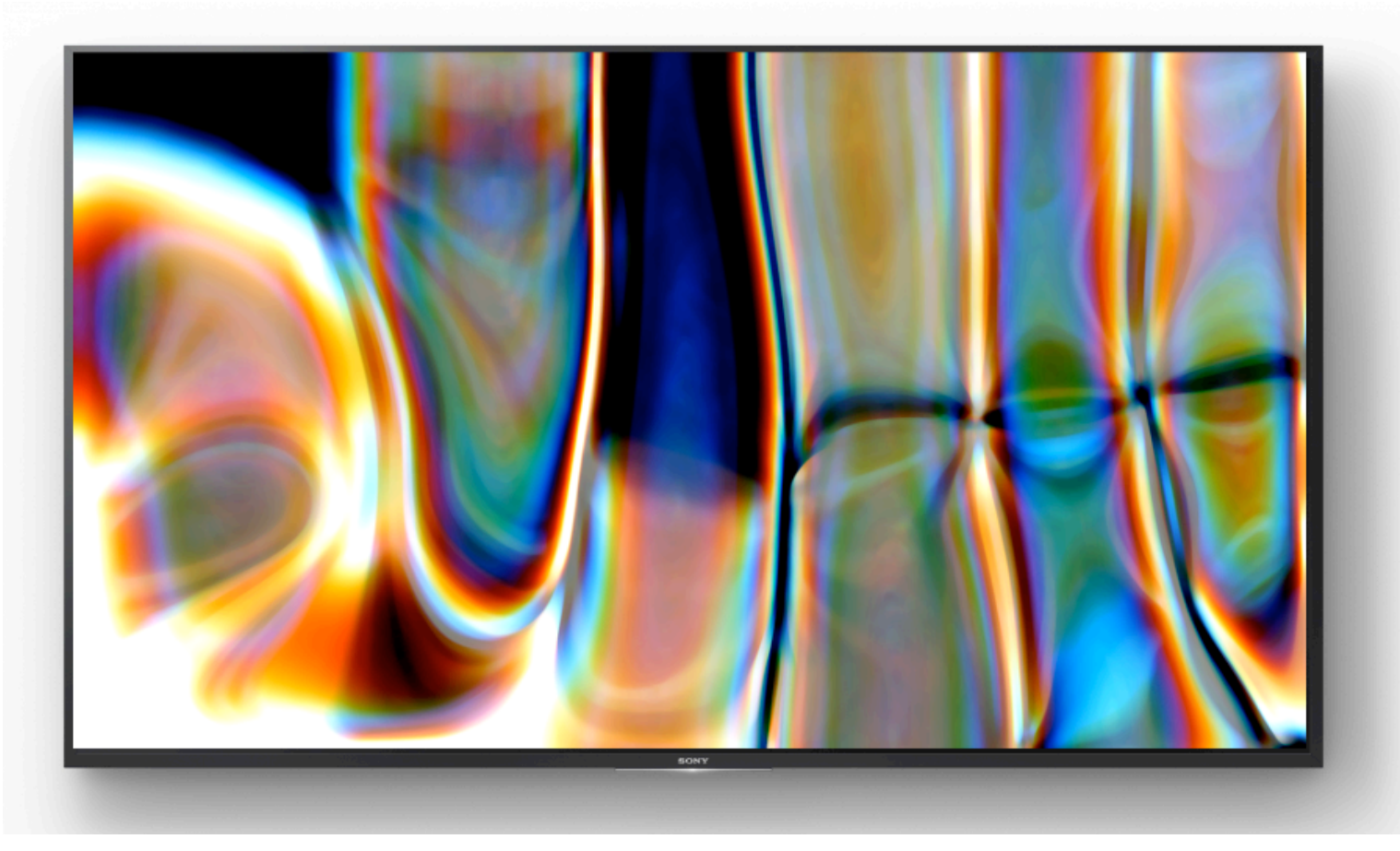
An algorithmic control interface, very simple to use to run the algorithm

10 high-definition videos with 5.1 sound (Glopé, Le Théâtre du labyrinthe, Le Cercle

de la sphère, Memory Entropic, Atomic Space, Intumespeed, L'Opéra de glace, Introït,Binaurale, Blue Bird)

7 virtual tableaux (Blue Bird, Blue Flash, Intumescence, Opéra2glace, Opéra3glace,Totem, White Interior)

An excerpt from the Labyrinth of Time book with 76 fixed images



LDT on large Sony high-definition screen

Labyrinthe du temps

Labyrinth of time

Laberinto de tiempo

Labyrinth der Zeit

ժամանակի լաբիրինթոս

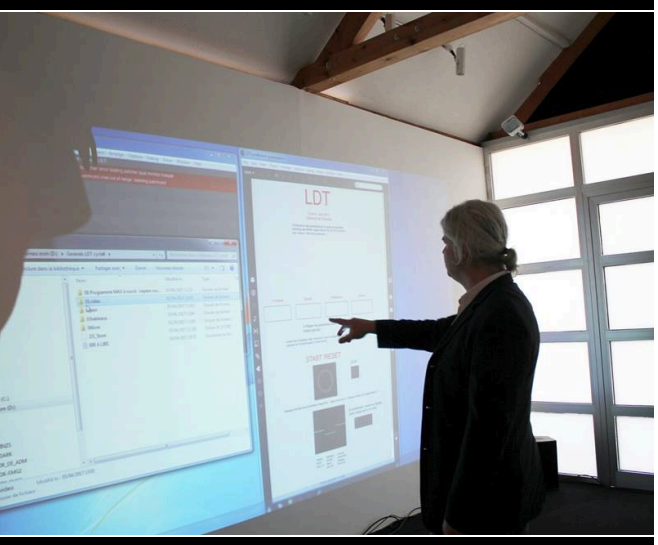
时间迷宫

시간의 미로

時の迷宮

هزارتوی زمان

Лабиринт Времени



j'invente en temps réel des espaces et des temps.

I invent spaces and times in real time.

en tiempo real, invento espacios y tiempos.

ich erfinde in echtzeit räume und zeitmässe.

Ես ստեղծագործում եմ ժամանակների և տարածությունների իրական ժամանակում

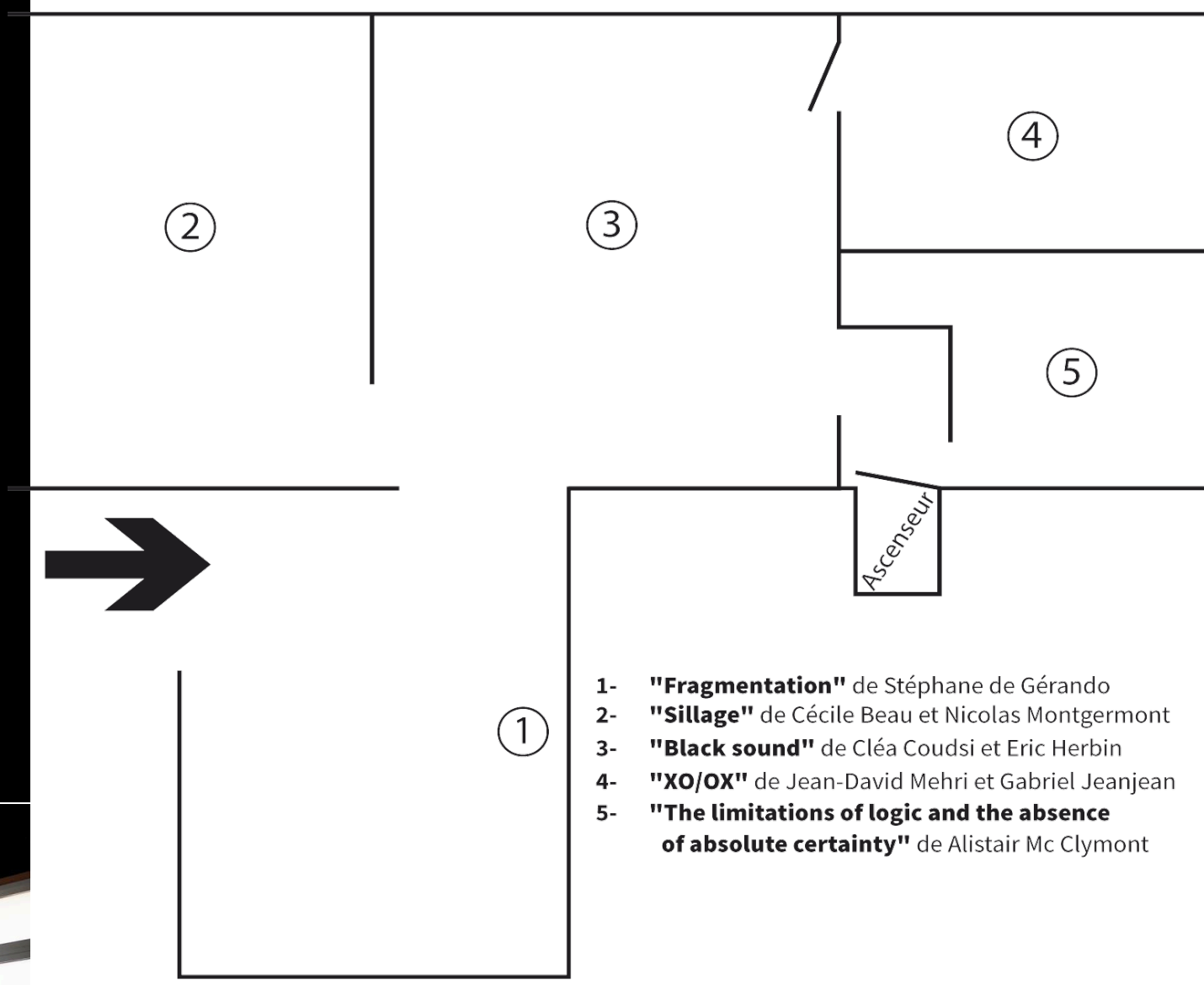
我以实时的方式创造空间与时间。

실시간으로 공간과 시간을 창조한다.

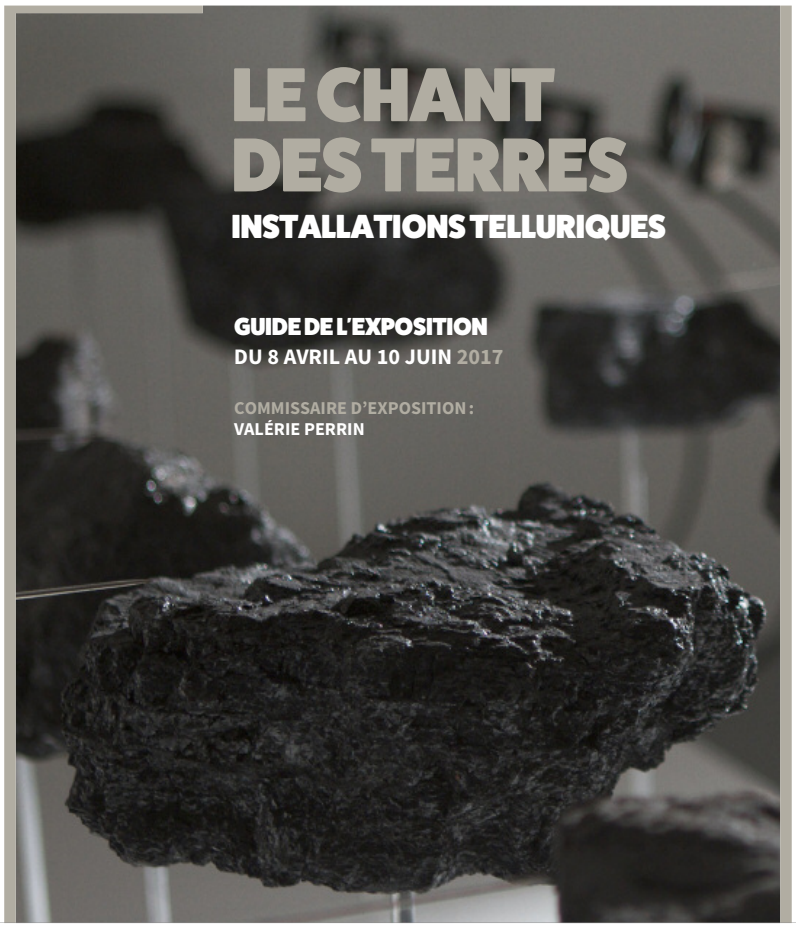
私は時空を即時に生み出します。

.با یک گسترش پیاپی, فضاها و زمان ها را به طور زنده می آفرینم

Я творю в реальном времени в пространстве и времени



1- **"Fragmentation"** de Stéphane de Gérando
2- **"Sillage"** de Cécile Beau et Nicolas Montgermont
3- **"Black sound"** de Cléa Coudsi et Eric Herbin
4- **"XO/OX"** de Jean-David Mehri et Gabriel Jeanjean
5- **"The limitations of logic and the absence of absolute certainty"** de Alistair Mc Clymont





Installation temps réel interactive et créative du Labyrinthe, contrôle gestuel à distance, monument historique

INTERACTIVE SONIC AND VISUAL

INSTALLATION REMOTE GESTURAL CONTROL AUGMENTED

• Creative, playful and interactive installation, augmented reality, remote gestural control, 16–30 April 2018, Digital Week, historic monument Citadel of Belfort,

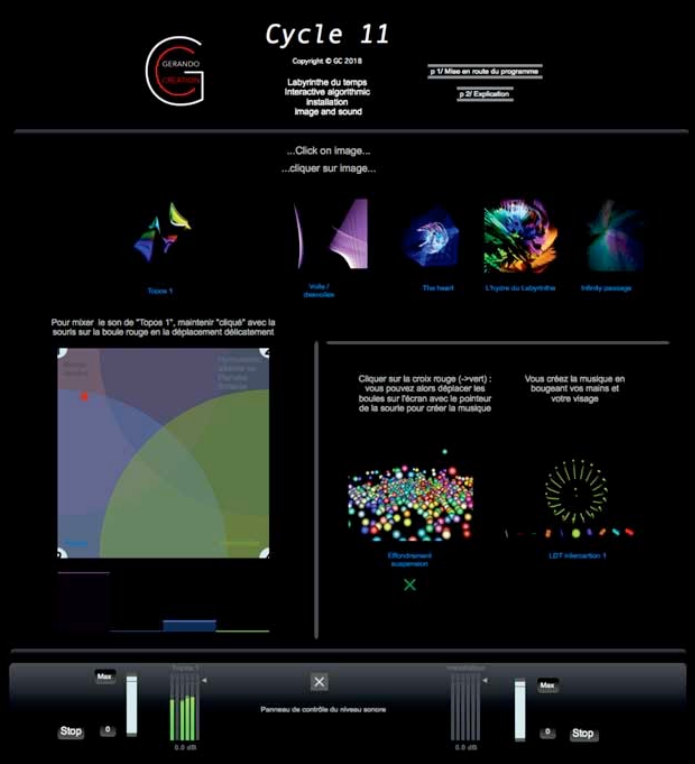
• The audience builds their own Labyrinth of Time by piloting and interacting in real time with the work, both at the level of sound and image...

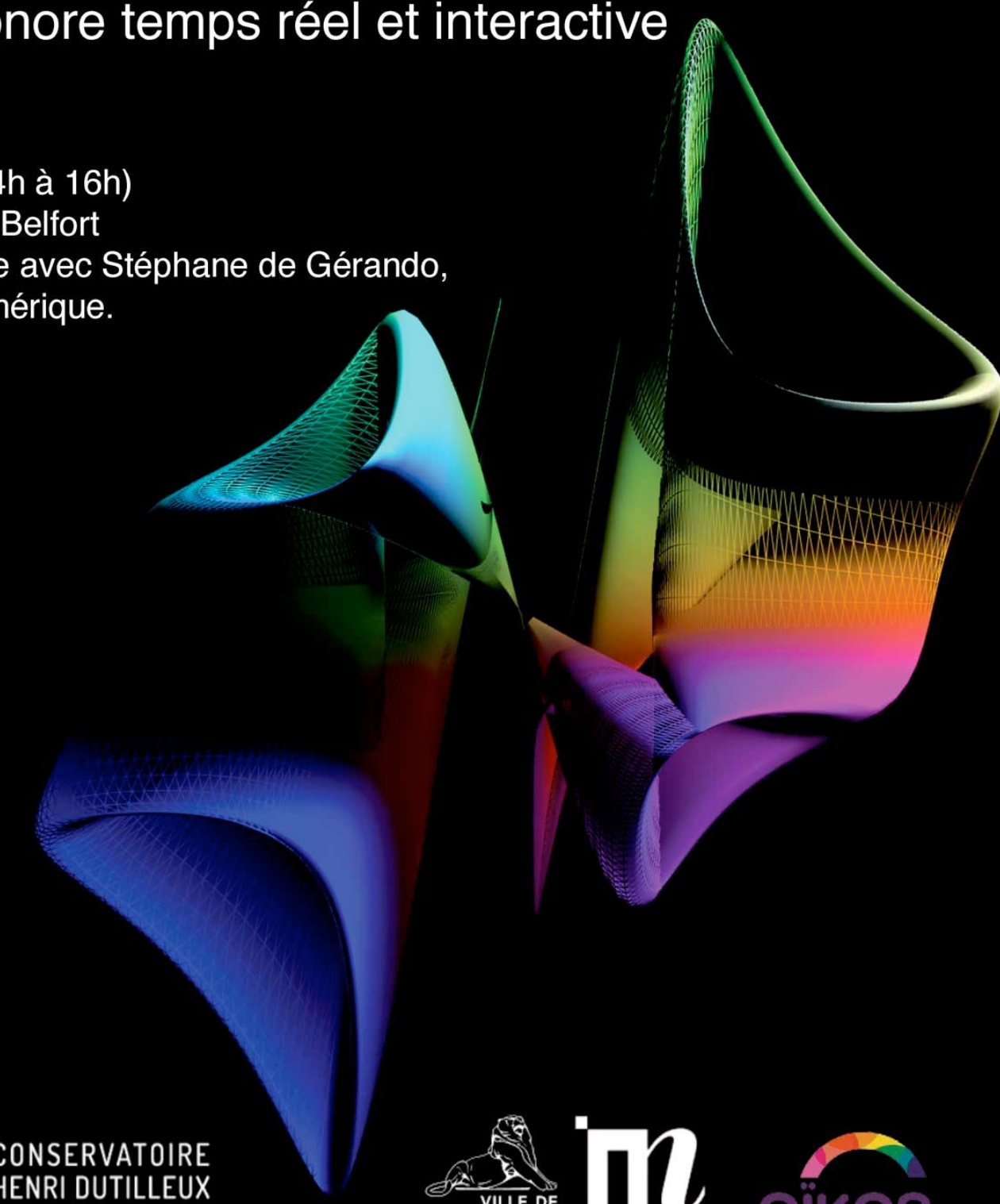
• Simple installation: iMac 24 inches, sound card, 4 speakers around the audience, screen, HD videoprojector (1920~1080) 10,000 lumens.



Création mondiale
Cycle 11 du *Labyrinthe du temps*
Installation visuelle et sonore temps réel et interactive
Stéphane de Gérando

Du 17 au 20 avril 2018 (10h-12h - 14h à 16h)
Casernement bas de la Citadelle de Belfort
Mardi 17 avril jusqu'à 18h., rencontre avec Stéphane de Gérando, dans le cadre de La semaine du numérique.





GRAND BELFORT

CONSERVATOIRE HENRI DUTILLEUX
MUSIQUE / DANSE / THÉÂTRE

VILLE DE BELFORT

Musée(s) de Belfort

OÏKOS


insecable




fragmentation

LDT interaction 1

Augmented reality, remote hand-face control program. Your image appears on screen with 10 objects floating before you. A star-shaped virtual headset automatically surrounds your head. Through hand movements, you mix 10 sound tracks. Facial movements control sound transformations — playback speeds, filtering, reverb...

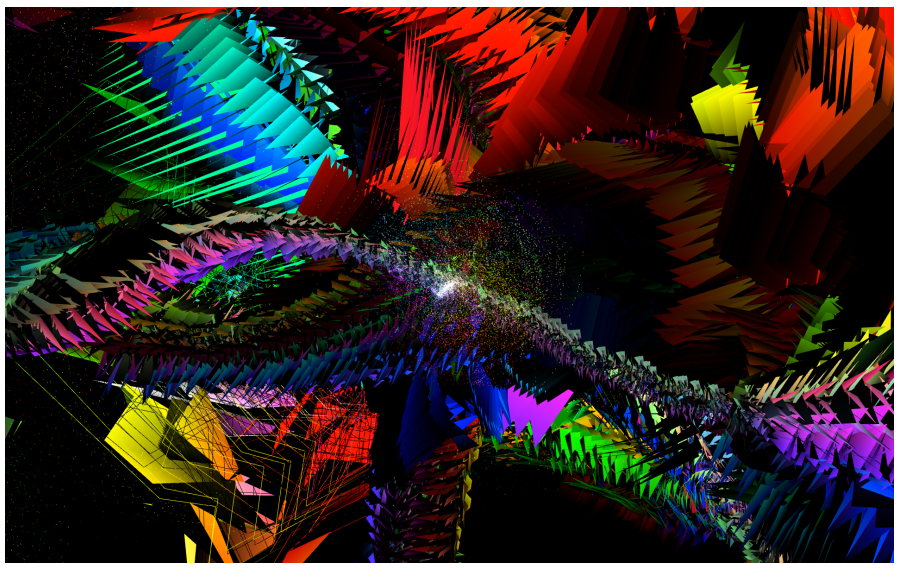


The Hydra of the Labyrinth

The Hydra draws its own sonic and visual trajectories that become unique, ephemeral tableaux.

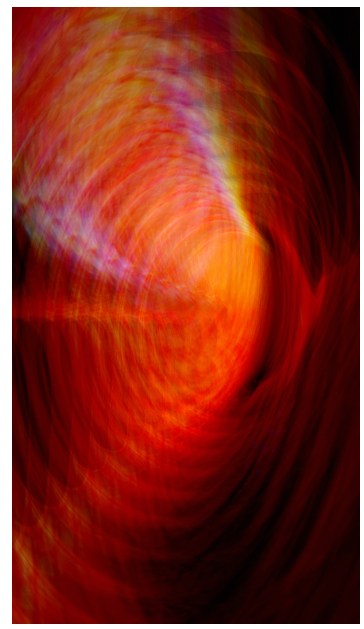
Infinity passage

Installation based on perceptual sonic and visual illusions — the infinite...



«L'Hydre du Labyrinthe»

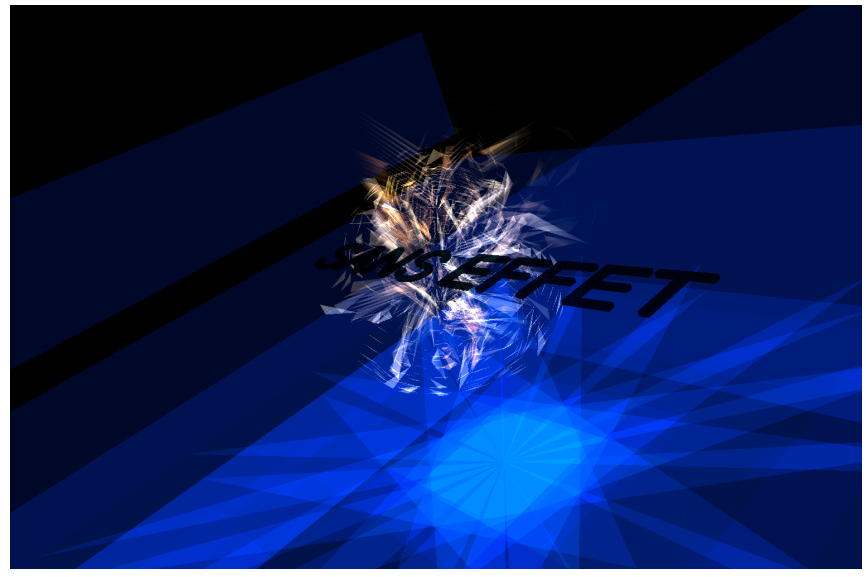
The heart



The words of the Labyrinth at the heart of a translucent cube — words that ring to the rhythm of a crotale tuned in quarter-tones, melodies with no repetition of pitches or intervals calculated by the computer, combined with an 'infra-bass' trembling of the heart.

Feu follet

Clap your hands: creation of rhythms and the dance of the will-o'-the-wisp illuminating your face red as it rests on a spinning floor.



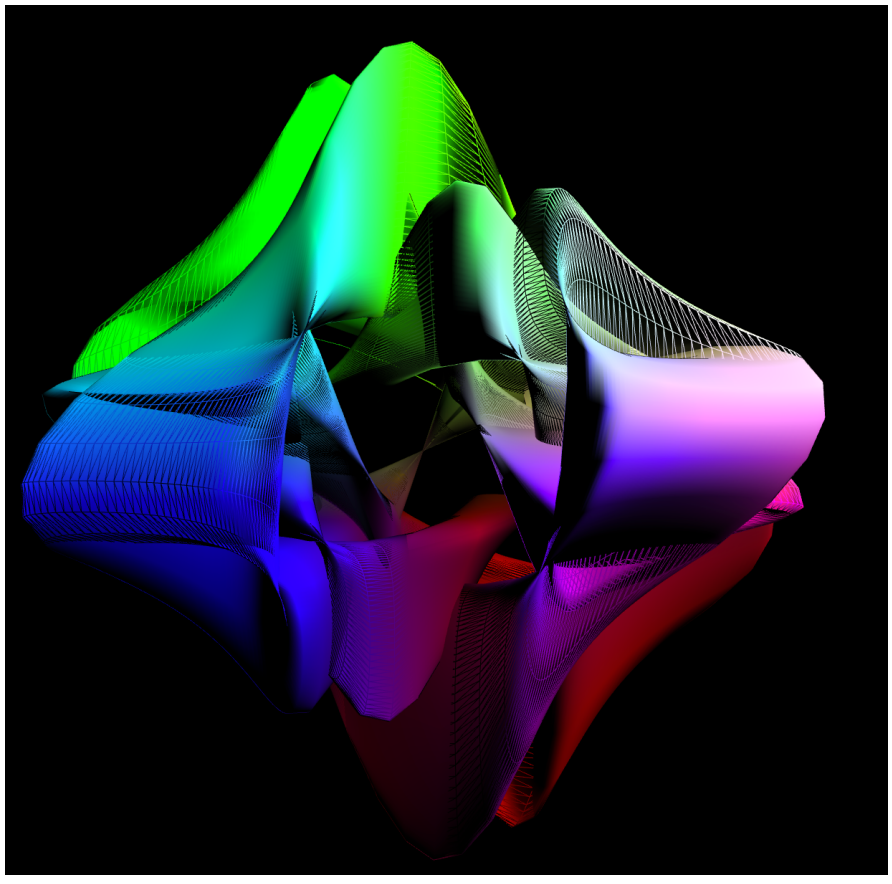
«The heart»

Topos 1

The first in the series of Labyrinthine Topos, Topos 1 is a unique topological sculpture that deforms continuously, a sculpture accompanied by a musical creation from the public, a graphic and sound interpolation of the satellites Plisse, Boréal cendré, Homometric attactor, Planette flottante and Remember.

Voile - dévoilées

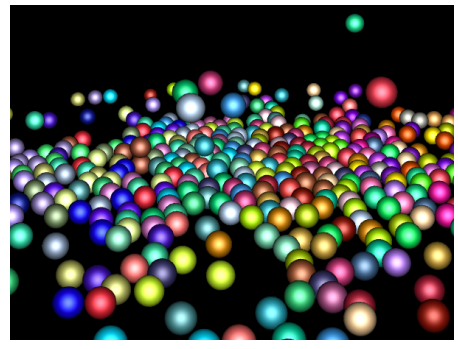
Algorithmic free surfaces created via a mathematical model (NURBS) representing arbitrary shapes — the face of a Voile — unveiled (combinable with Topos 1 in superimposition).



«Topos 1»

Effondrement Suspension

500 colored balls collapse: transition from noise to silence. The audience then projects balls one by one with the mouse pointer — they collide in near-suspension before falling. Each ball represents a partial of an inharmonic timbre: mutation of an original noise toward a melody-timbre.



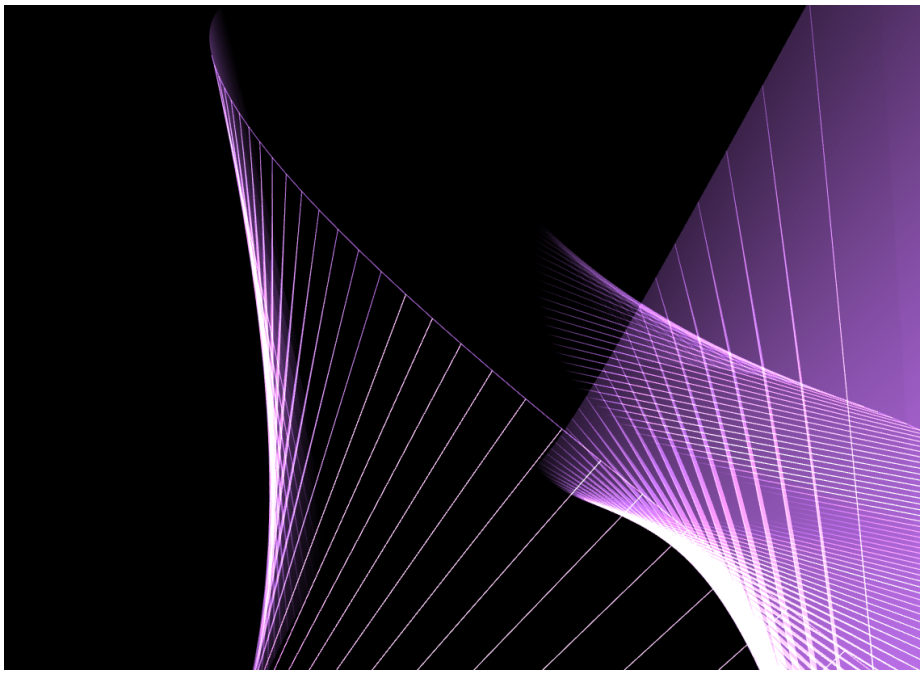
«Effondrement - suspension»

Traces en Ison

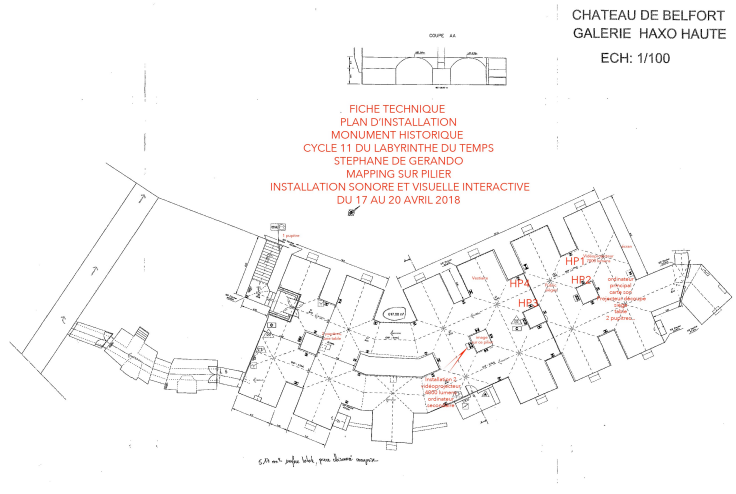
Your voice, noisy or melodic breath, composes a digital tableau. Your singing is captured at times, as if frozen, then spatialized in real time by the computer, with the possibility of triggering infinite reverberation to create chords and timbres between reality and virtuality.

Also references a birth, a doubling of sound, metric space, Celtic, Byzantine, Medieval cultures... the trace of flow and ebb, an ephemeral shore of grains of sand or foam.

Installation plan



«Voile - dévoilées»





Cité de la Musique in Paris, photos of the creation of the Ice Opera satellite, 2011

CITY OF MUSIC PARIS

BIG SCREEN, ELECTRONICS,
CHOIR, SOLOISTS WITH NARRATOR

•Large screen, computer, 2 soloists, a narrator, children's choir, 5.1 electronic sound, November 25, 2011, Cité de la Musique in Paris, premiere of the satellite performance "L'Opéra de glace" (The Ice Opera).

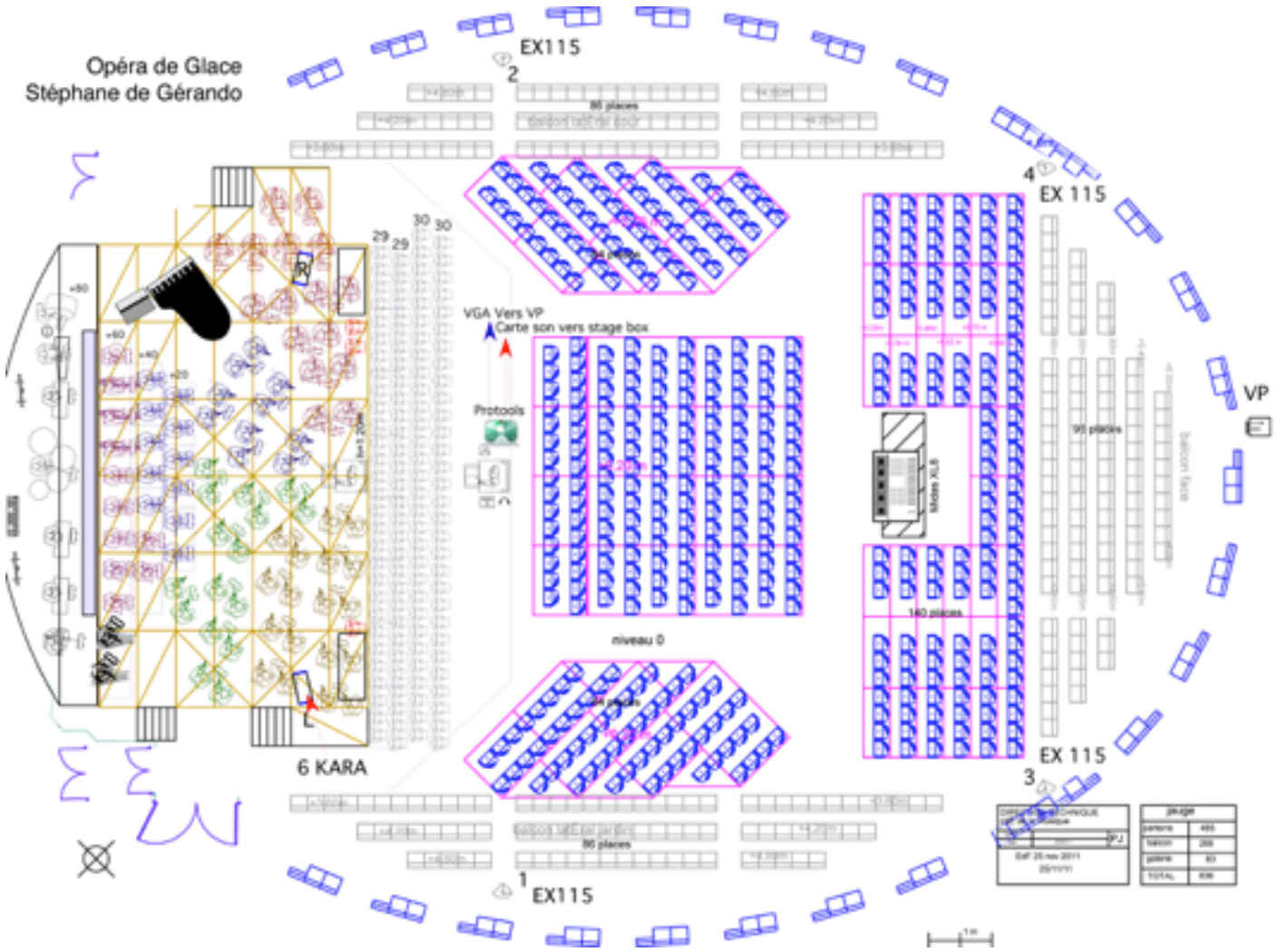
•Conductor: Michael Cousteau; Choir Director: Edwin Baudo; Soloists: Hata Shigeko, mezzo-soprano; Marion Sicre, mezzo-soprano; Emmanuel Meyer; Actor; Sound Engineer and Director: Frédéric Prin; Technical Teams of the Cité de la Musique (video, lighting); Computer Director: Stéphane de Gérando.

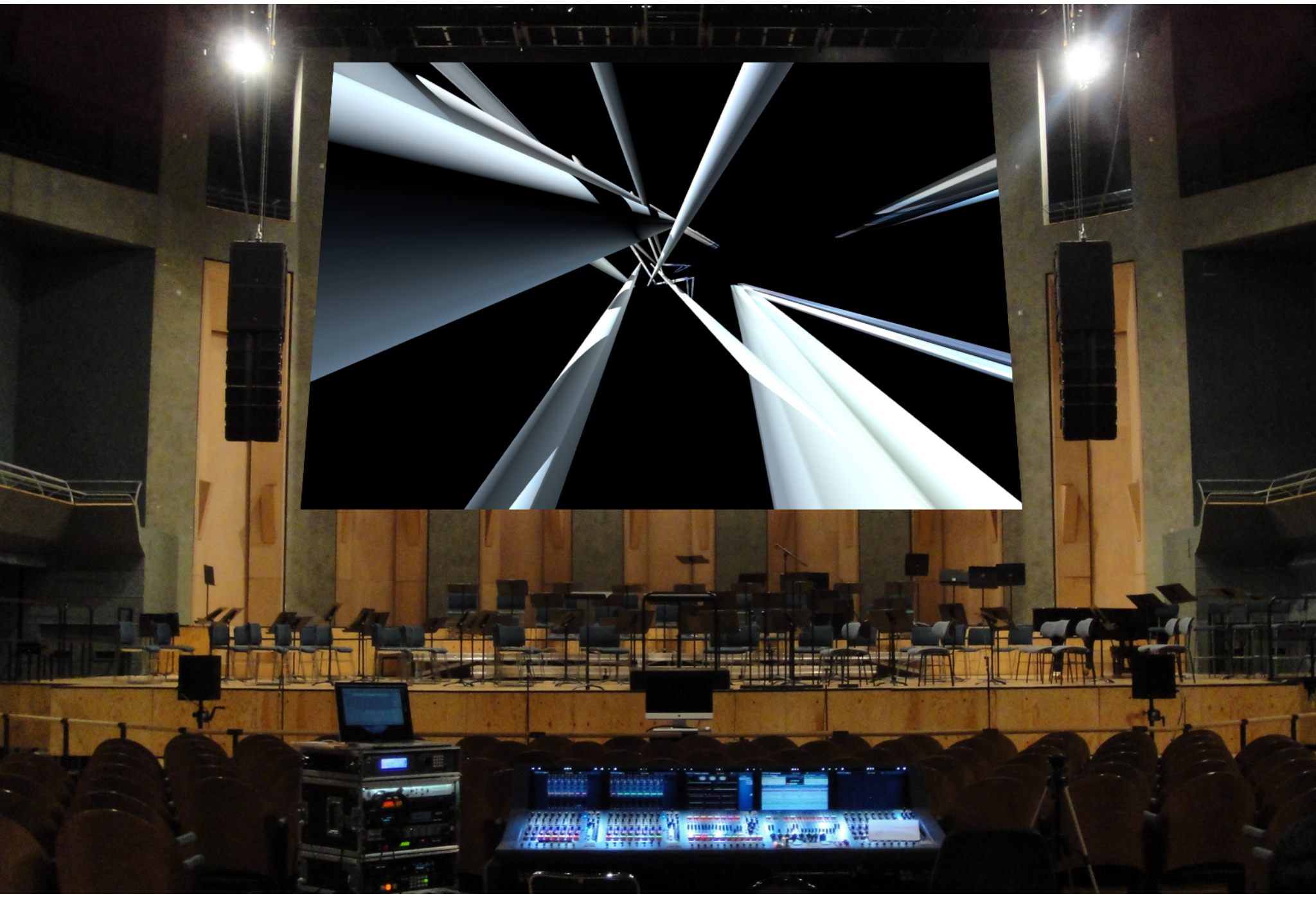









Opéra de Glace
Stéphane de Gérando
EX115
2
86 places
4
EX 115
VGA Vers VP
Carte son vers stage box
Protools
VP
95 places
140 places
niveau 0
6 KARA
EX 115
3
86 places
1
EX115



Photos of a creation from LDT's Cycle 9, "Stellar Wave," outdoors and at night: physical installation followed by creation

OUTDOORS AND AT NIGHT

LARGE SCREEN PROJECTION,

REAL-TIME ALGORITHM,

DANCE,

REAL-TIME VIOLIN AND ELECTRONICS



•Outdoor, nighttime video projection on a large screen, real-time image and sound algorithm, contemporary dancer and violinist, with real-time electronics (score composed in real time - played back on a computer), with a sound installation in the citadel's moat leading to the video projection site.

•Belfort Citadel, June 9, 2017, 9-11 pm, new creation from cycle 9 of The Labyrinth of Time, Marie-Pierre Jaux contemporary dance, Olivier Compagnon violin

MATERIEAL

•3 networked computers (latest generation Macs) via Ethernet cable, one of which is on stage

•RME Fireface 802 sound card (at least four outputs)

•Professional front-to-rear speakers around the audience (quadruple channel minimum with subwoofer, over 1000 watts)

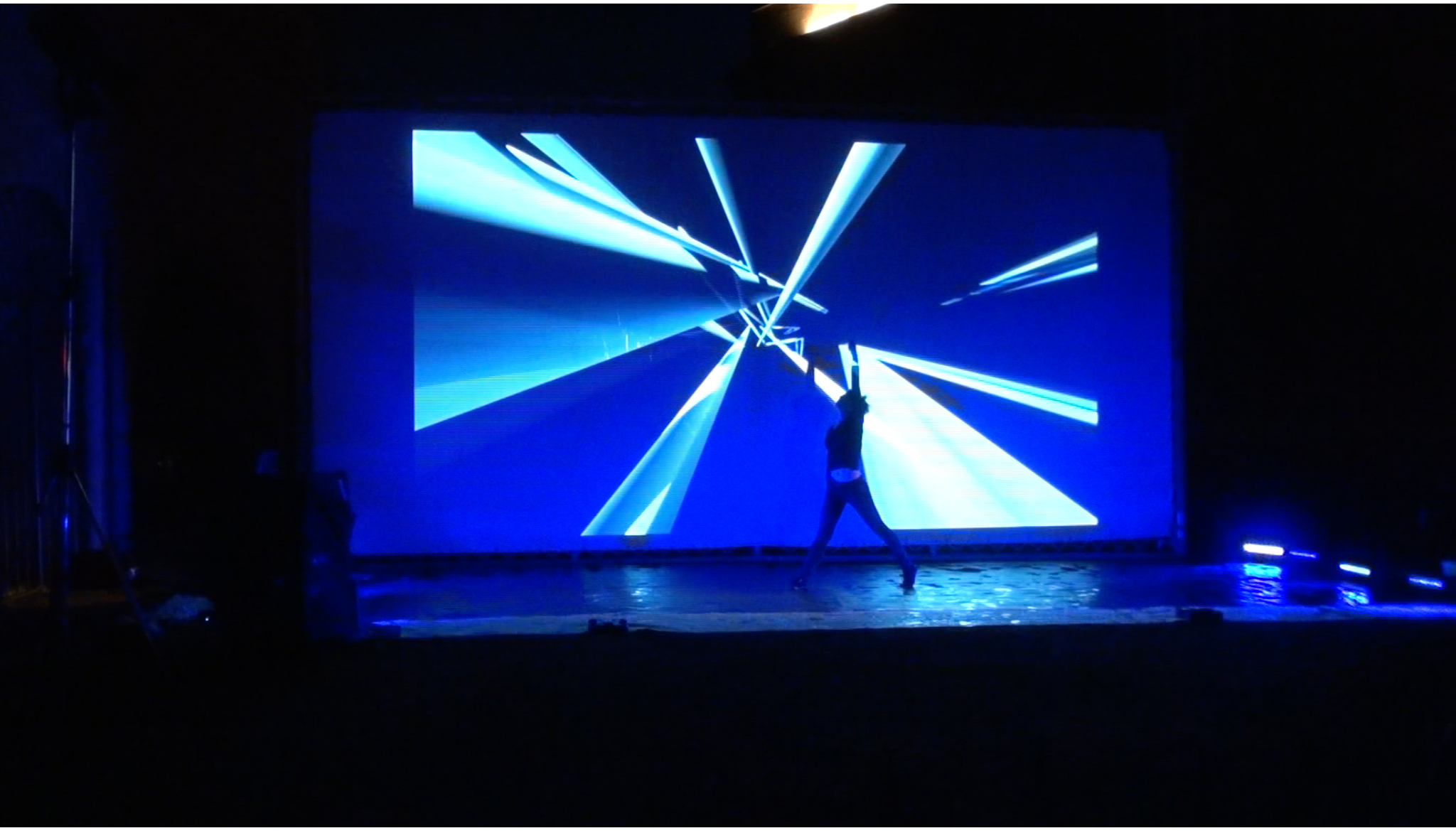
•Professional video projector (Barco type) and large cinema screen

•3 control rooms: sound, lighting, and computer (for the composer)

•1 contact microphone for the violin

•Black floor mat for the dancer











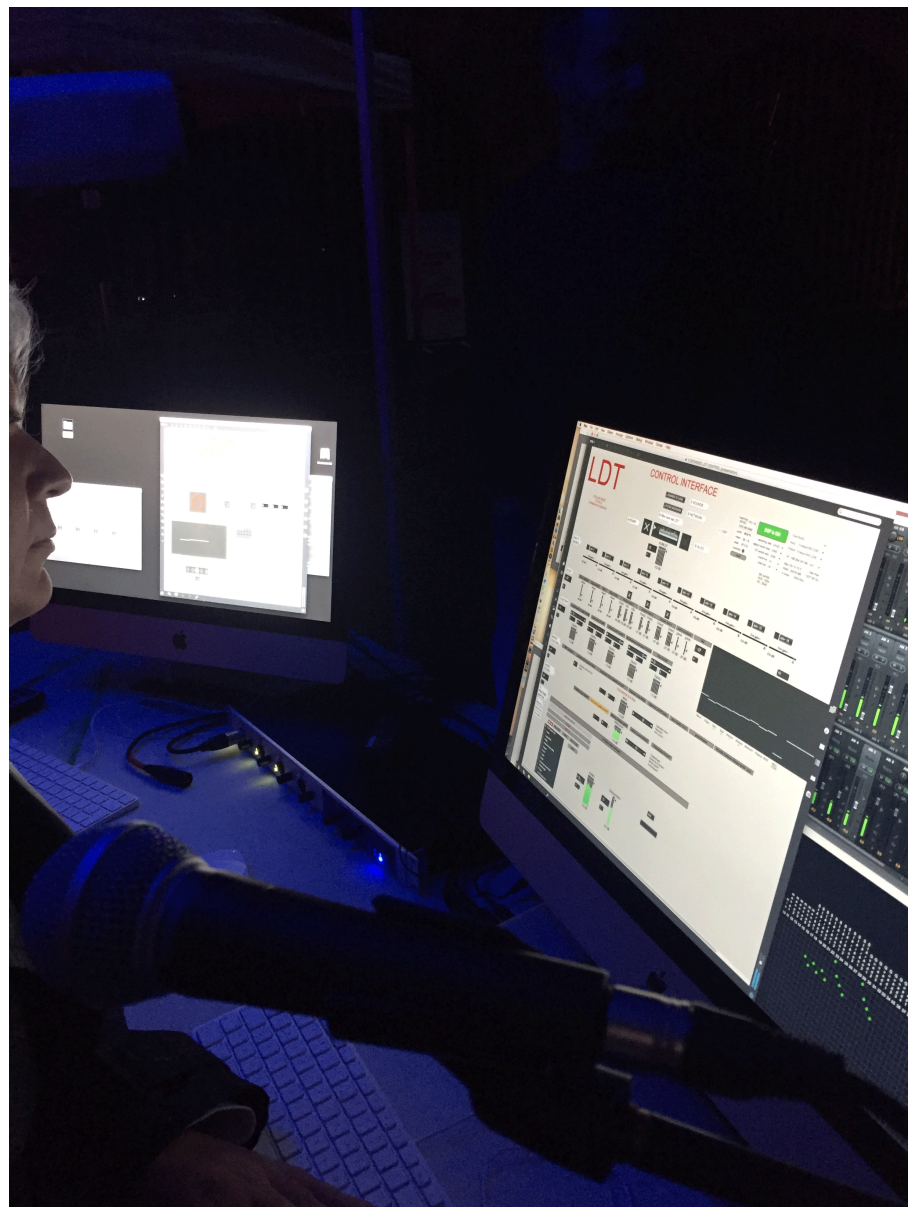
Example of a list of equipment for rent

(sound - light)

Sound

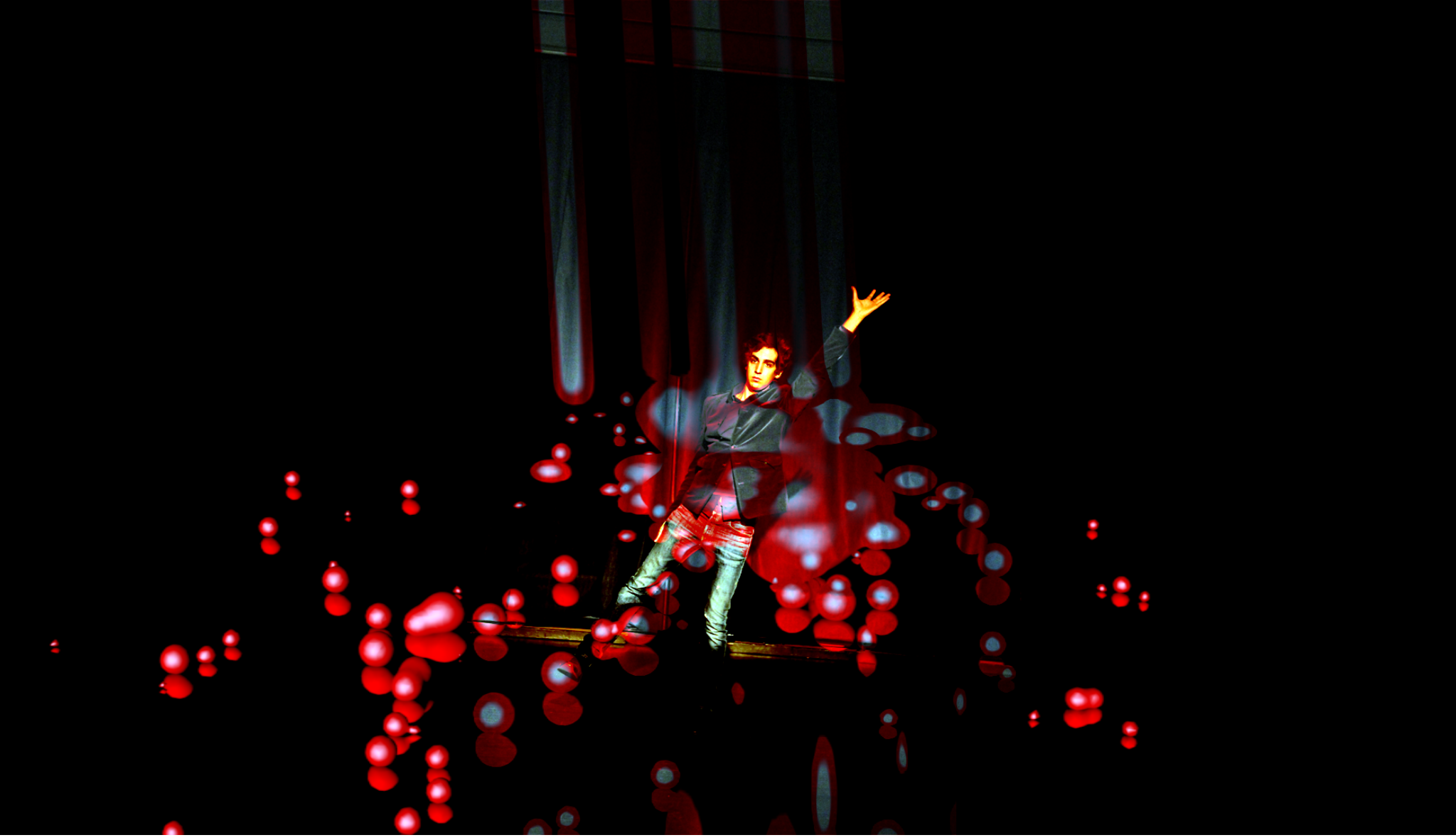
L-Acoustics X15 HiQ (x2) Coaxial Speaker. Active 2-way
K&M 21
4-6 Foot Height 1.38 to 2.18M, 40kg load capacity
L-Acoustics SB-18 Subwoofer 1 x 18" L-Acoustics LA4X Amplified Controller
Behringer X32 Digital Mixer (32 In - 16 Out)
Dpa d:vote 4099 Lo - Supercardioid Microphone - MicroDot-Bare
Dpa Violin or Mandolin Clip for 4099
20m 4P Speakon Cable
10m 4P Speakon Cable
4P Speakon Extension Plug
2M 4-Pair XLR Multi-Module Cable
5M 4-Pair XLR Multi-Module Cable
10M 4-Pair XLR Multi-Module Cable
20M 4-Pair XLR Multi-Module Cable





Lighting

EventKolor LED Standalone Projector 36W
STICKOLOR STARWAY LED bar IP20 50cm 8*8W RGBW PowerCon 3G2.5 5m cable
PowerCon 3G2.5 10m cable
XLR module 10m cable
DMX512 XLR 5-pin cable 10m cable
Leprecon LP612 12-channel console
+ Computer and video projection control



Emmanuel Meyer, actor, and Corinne Hurtu, contemporary dancer,
creation of the Timu satellites and the Circle of the Sphere, Festival of Innovation and Creation 2011-2014

3ICAR FESTIVAL PARIS

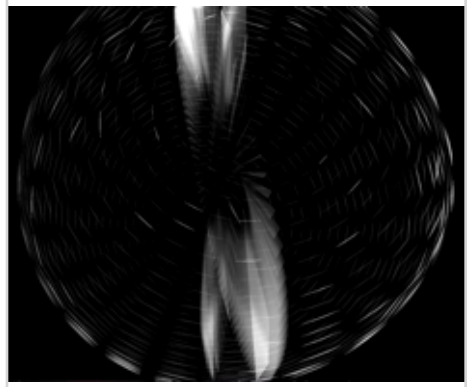
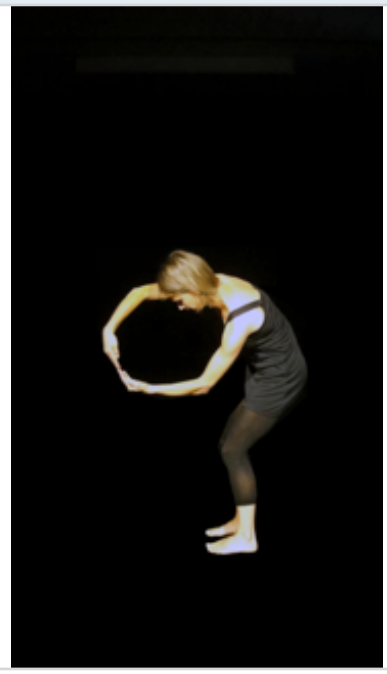
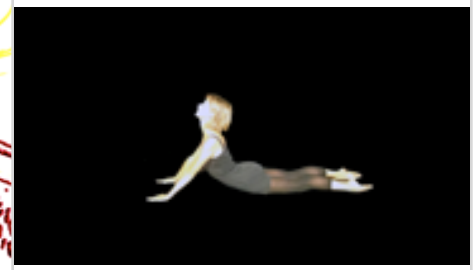
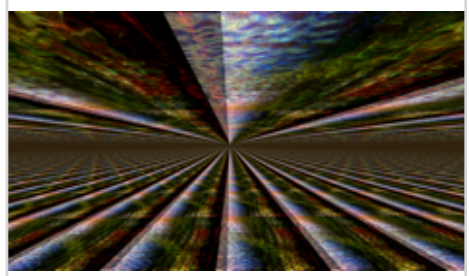
VIDEO, DANCE, ACTOR

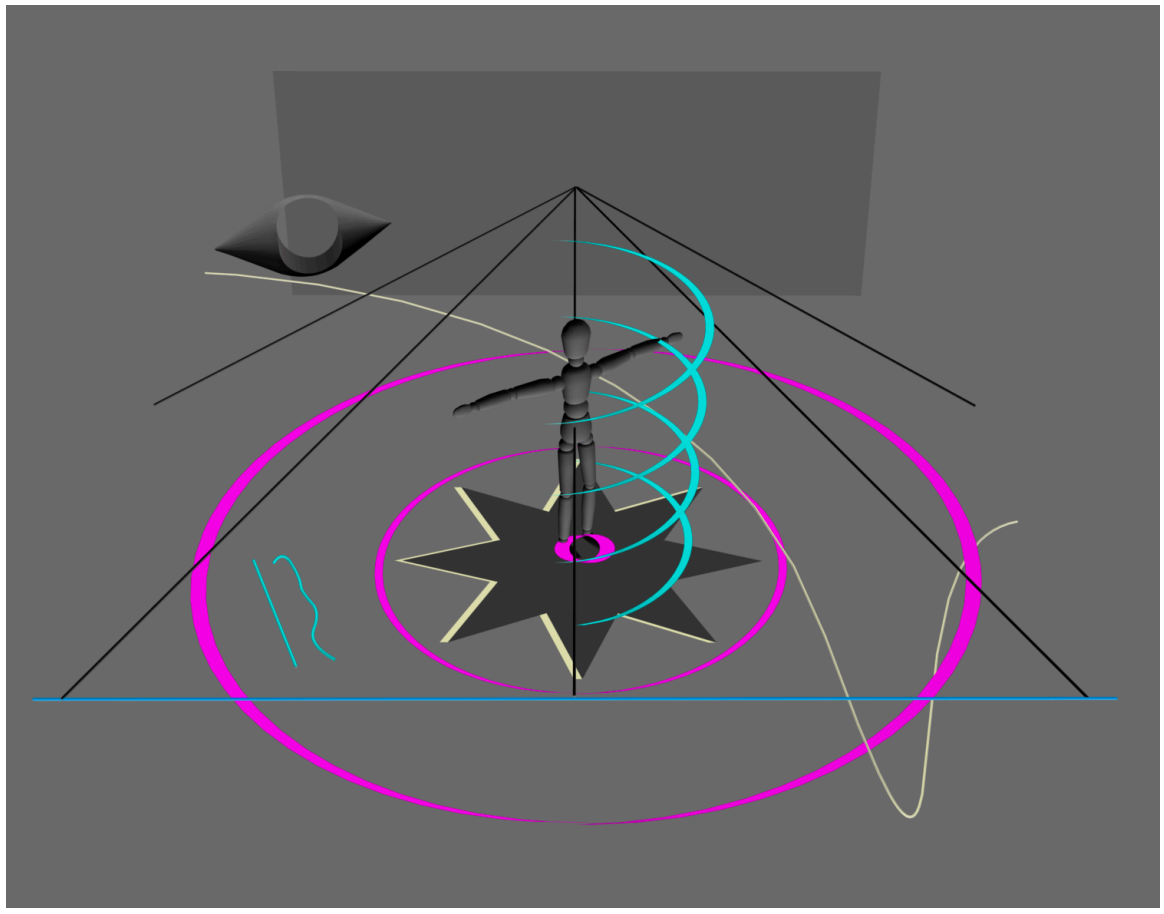
Timu for dance, video and actor and from the Circle of the Sphere for actor and video, 3icar Innovation and Creation Festival, Paris, 2011, 2012, 2014



Excerpt: “Rules of interpretation theatre – dance – music” (80 pages)

Rule 3 - dance, theatre, music, body score Fundamental postures and variations (analogies between video, dance, and theatre)

Description	Vidéo	Danseuse	Comédien
1 The circle – the sphere (Timu – Binaural) Theater: Attempting to escape from the sphere.			
2 The Bird (Timu – Blue Bird) Theatre: Gaze towards the sky.			
3 Perspectives (Timu – Blue bird) Theatre: haranguing the crowd.			



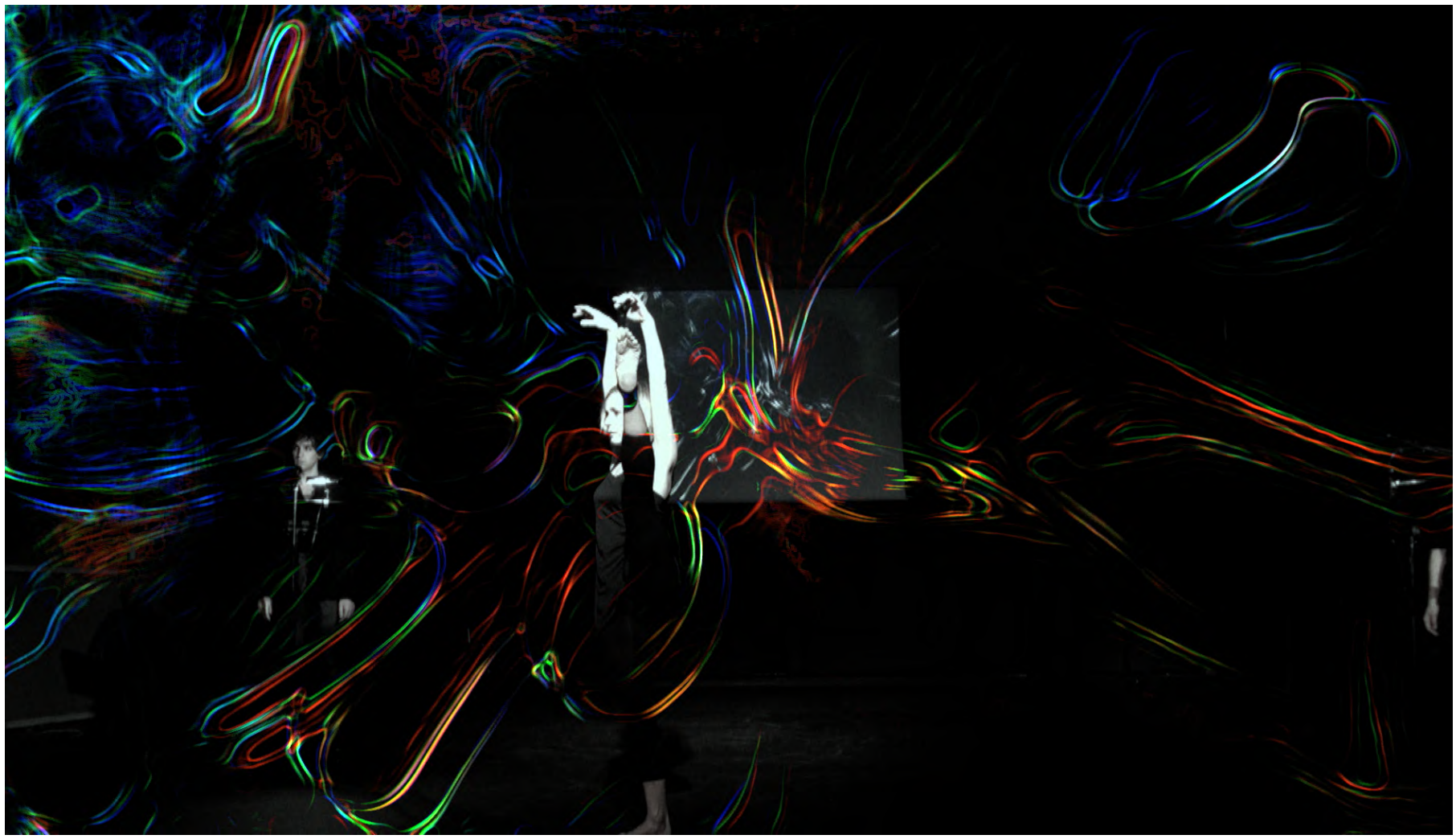
Interactive 3D model for representing trajectories and objects

Geometric shapes and imaginary objects define the possible paths and interactions of the performers (actors, dancers, musicians) on stage. These shapes are drawn from an analysis of the videos of The Labyrinth and its related works:

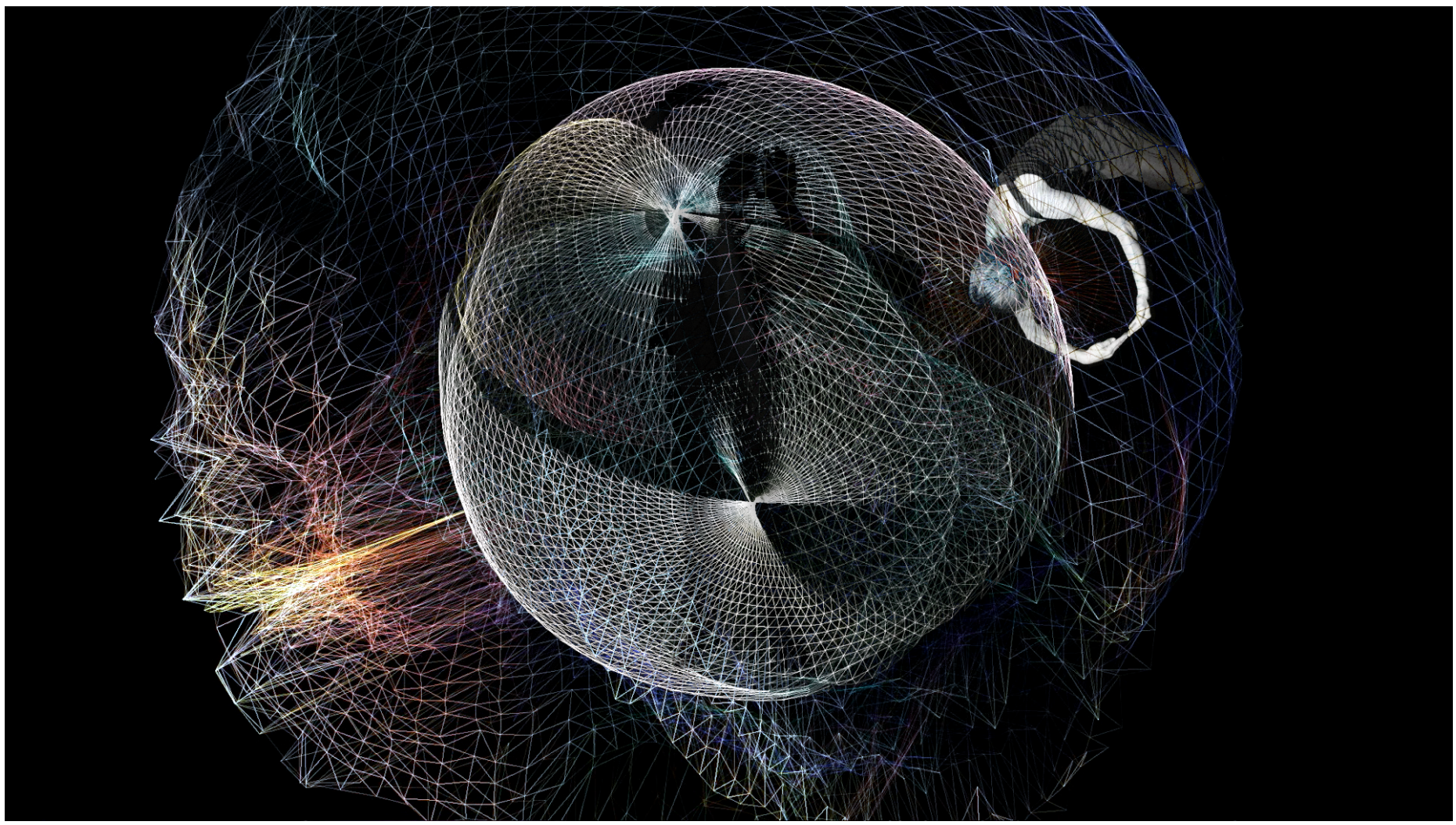
the spiral (red, in the center), the eye (black, in the background left, a shape with a hole in the center that can be passed through), the circles (green, from the center to the edges), the star (blue, in the center), the bird (dark blue, crossing the stage diagonally with a sort of head at the far right end), the sphere (purple, in the background right), perspectives (gray, various lines that converge in the background center), the earthworm (orange, a strange shape composed of two segments, on the front left).

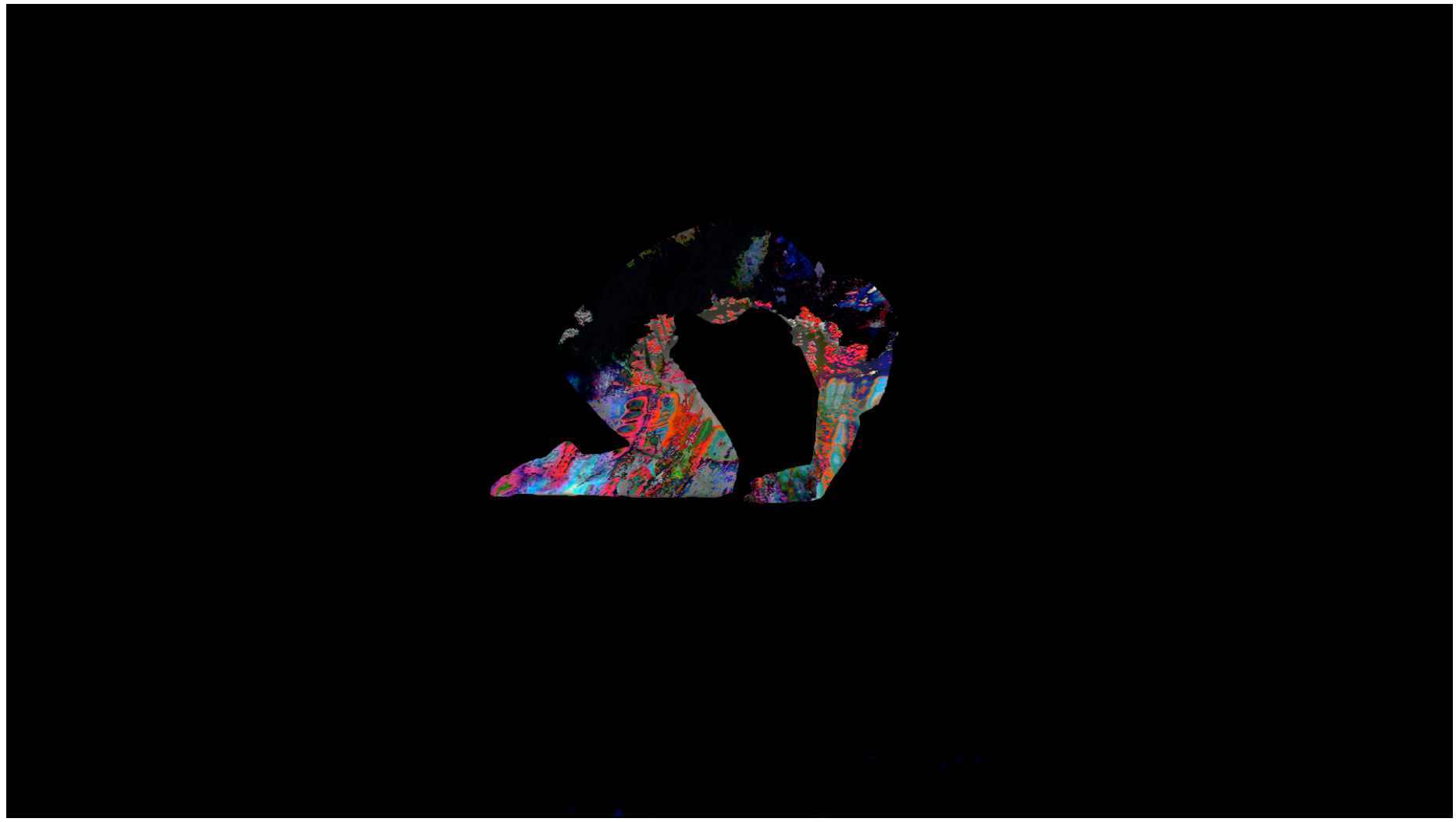
Interactive 3D visualization of imaginary trajectories via the internet:

https://sketchfab.com/3d-models/gerando-scene-labyrinthe-79d05131634b4057bd081c8ccb3f438c









Photos of the installation and creation of cycle 9 of LDT, Le Granit national stage, FIMU International Festival, June 4, 2017

GRANIT NATIONAL STAGE MUSIC, DANCE, VIDEO

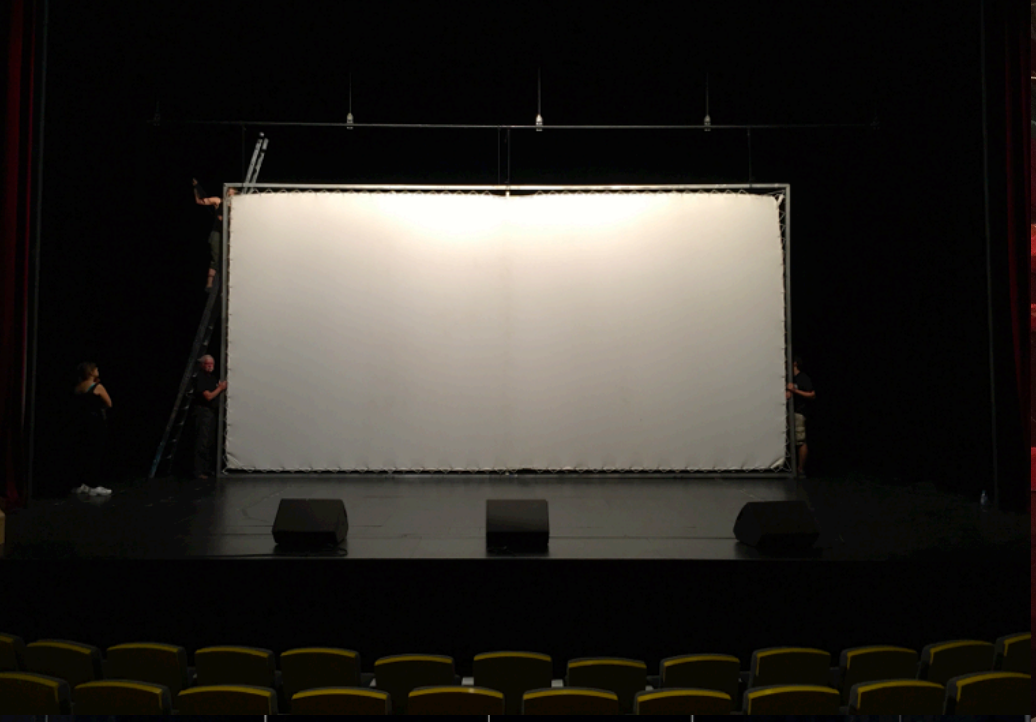


•Indoor large-screen video projection, real-time image and sound algorithm, contemporary dancer and violinist, with real-time electronics

•Granit National Stage, FIMU International Festival, June 4, 2017, premiere of Cycle 9 of The Labyrinth of Time

•Similar equipment to the previous one but in a theater (example 2)



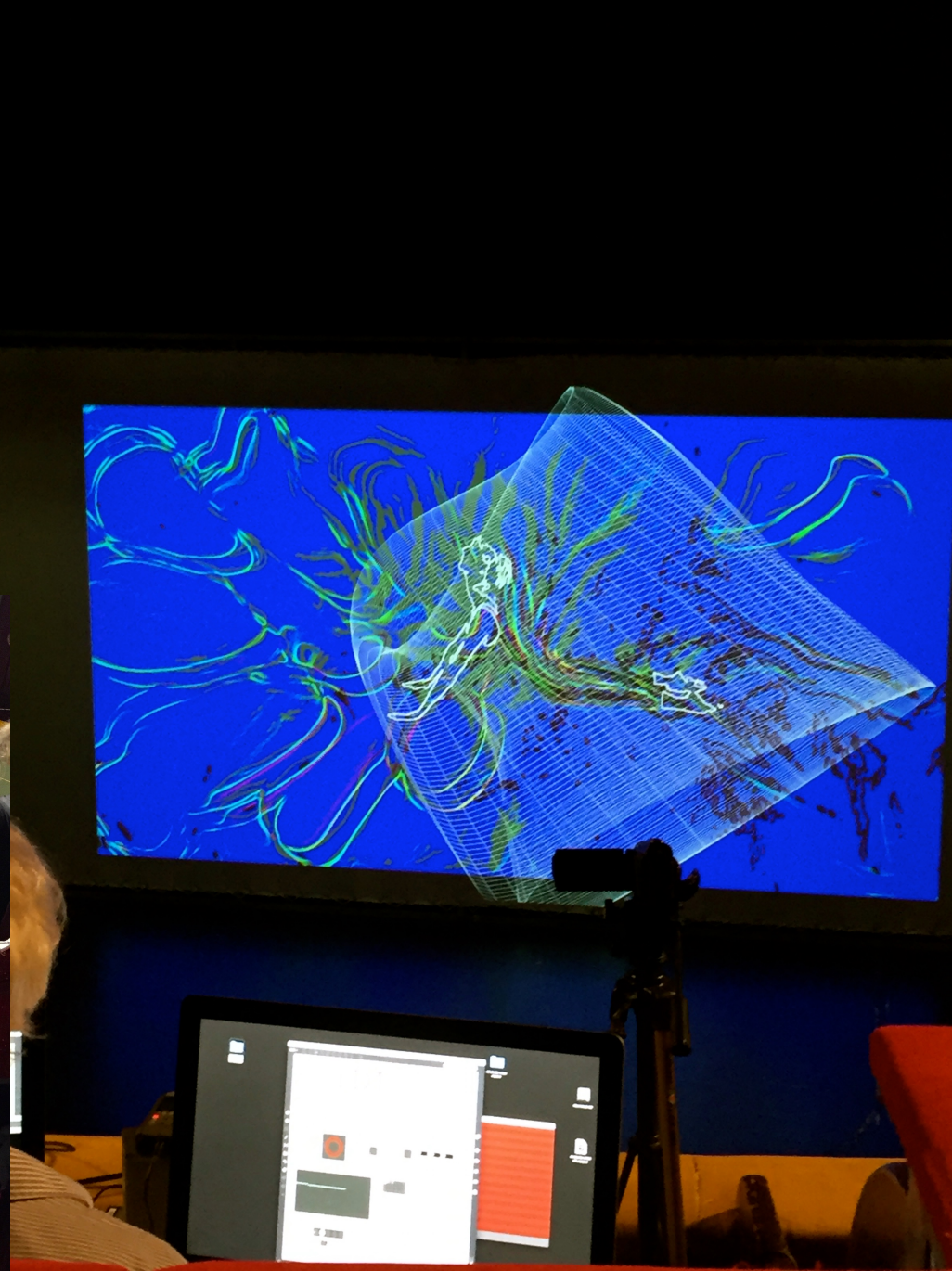








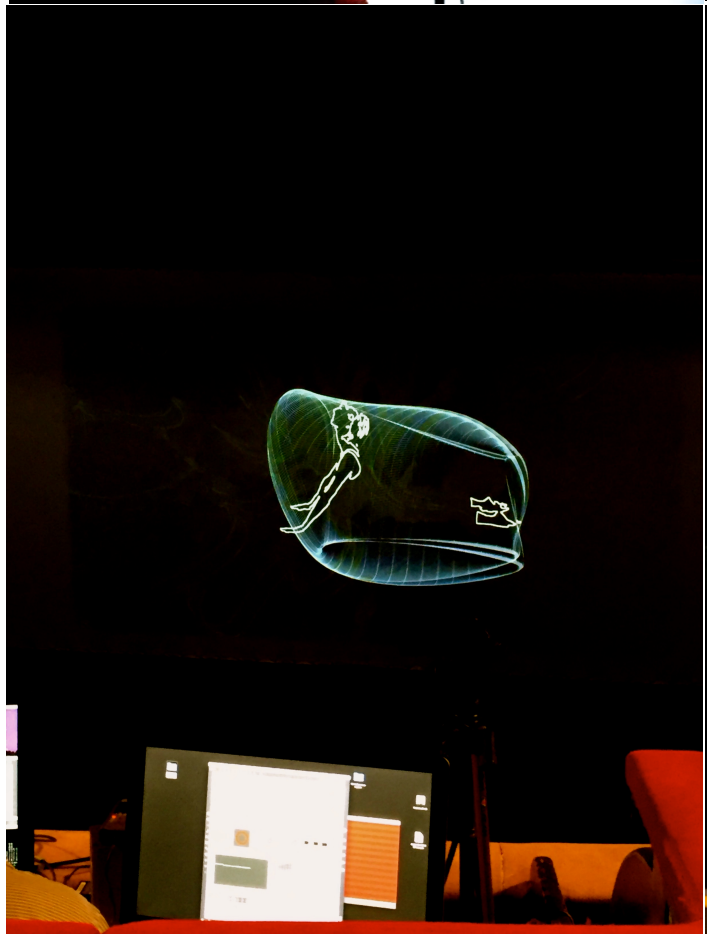








Olivier Compagnon, violin





Marie-Pierre Jaux, contemporary dance







Photos of the first creation by LDT, Toulouse Museum of Modern and Contemporary Art, 3icar Innovation and Creation Festival

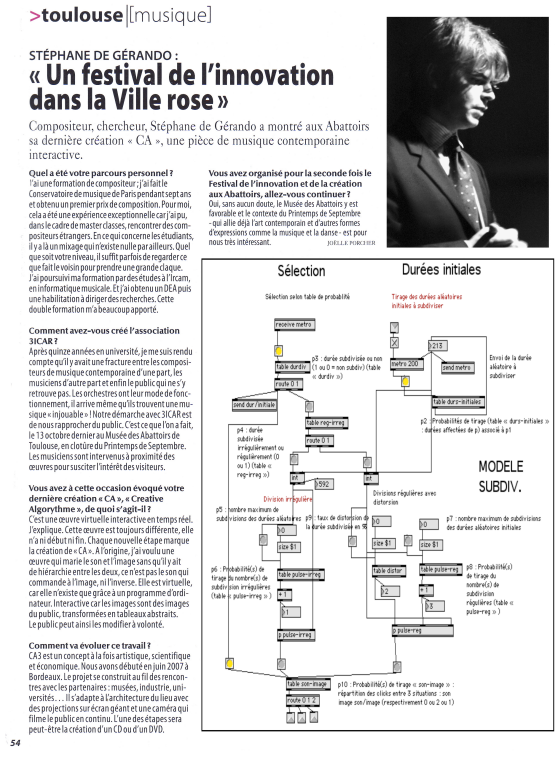
MUSEUM OF MODERN AND CONTEMPORARY ART, TOULOUSE

INSTALLATION

- Two simultaneous video projections of LDT, performances, lectures, and concerts, over three days from October 13 to 15, 2006, at the innovation and creation festival during the "Broken Lines" exhibition, the Printemps de Septembre, in the presence of Anish Kapoor's monumental sculpture, My Red Homeland.

- Presentation of the CA satellite, creative algorithm.





>toulouse |[musique]

STÉPHANE DE GÉRANDO :

« Un festival de l'innovation dans la Ville rose »

Compositeur, chercheur, Stéphane de Gérando a montré aux Abattoirs sa dernière création « CA », une pièce de musique contemporaine interactive.

Quel a été votre parcours personnel ?
J'ai une formation de compositeur ; j'ai fait le Conservatoire de musique de Paris pendant sept ans et obtenu un premier prix de composition. Pour moi, cela a été une expérience exceptionnelle car j'ai pu, dans le cadre de master classes, rencontrer des compositeurs étrangers. En ce qui concerne les étudiants, il y a là un mixage qui n'existe nulle par ailleurs. Quel que soit votre niveau, il suffit parfois de regarder ce que fait le voisin pour prendre une grande claque. J'ai poursuivi ma formation par des études à l'Ircam, en informatique musicale. Et j'ai obtenu un DEA puis une habilitation à diriger des recherches. Cette double formation m'a beaucoup apporté.

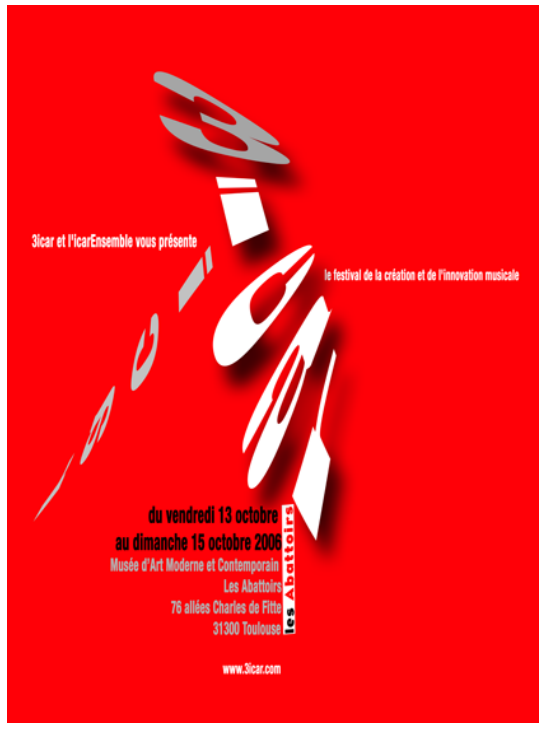
Comment avez-vous créé l'association 3ICAR ?
Après quinze années en université, je me suis rendu compte qu'il y avait une fracture entre les compositeurs de musique contemporaine d'une part, les musiciens d'autre part et enfin le public qui ne s'y retrouve pas. Les orchestres ont leur mode de fonctionnement, il arrive même qu'ils trouvent une musique « injouable » ! Notre démarche avec 3ICAR est de nous rapprocher du public. C'est ce que l'on a fait, le 13 octobre dernier au Musée des Abattoirs de Toulouse, en clotûre du Printemps de Septembre. Les musiciens sont intervenus à proximité des œuvres pour susciter l'intérêt des visiteurs.

Vous avez à cette occasion évoqué votre dernière création « CA », « Creative Algorythme », de quoi s'agit-il ?
C'est une œuvre virtuelle interactive en temps réel. J'explique. Cette œuvre est toujours différente, elle n'a ni début ni fin. Chaque nouvelle étape marque la création de « CA ». À l'origine, j'ai voulu une œuvre qui marie le son et l'image sans qu'il y ait de hiérarchie entre les deux, ce n'est pas le son qui commande à l'image, ni l'inverse. Elle est virtuelle, car elle n'existe que grâce à un programme d'ordinateur. Interactive car les images sont des images du public, transformées en tableaux abstraits. Le public peut ainsi les modifier à volonté.

Comment va évoluer ce travail ?
CA3 est un concept à la fois artistique, scientifique et économique. Nous avons débuté en juin 2007 à Bordeaux. Le projet se construit au fil des rencontres avec les partenaires : musées, industrie, universités… Il s'adapte à l'architecture du lieu avec des projections sur écran géant et une caméra qui filme le public en continu. L'une des étapes sera peut-être la création d'un CD ou d'un DVD.

Vous avez organisé pour la seconde fois le Festival de l'innovation et de la création aux Abattoirs, allez-vous continuer ?
Oui, sans aucun doute, le Musée des Abattoirs y est favorable et le contexte du Printemps de Septembre - qui allie déjà l'art contemporain et d'autres formes d'expressions comme la musique et la danse - est pour nous très intéressant.
JOELLE PORCHER

54



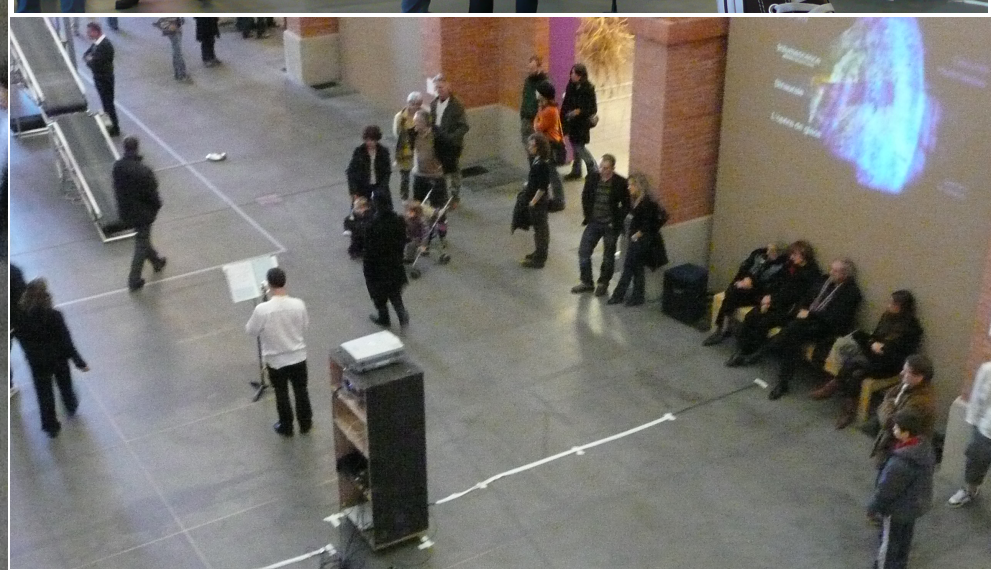


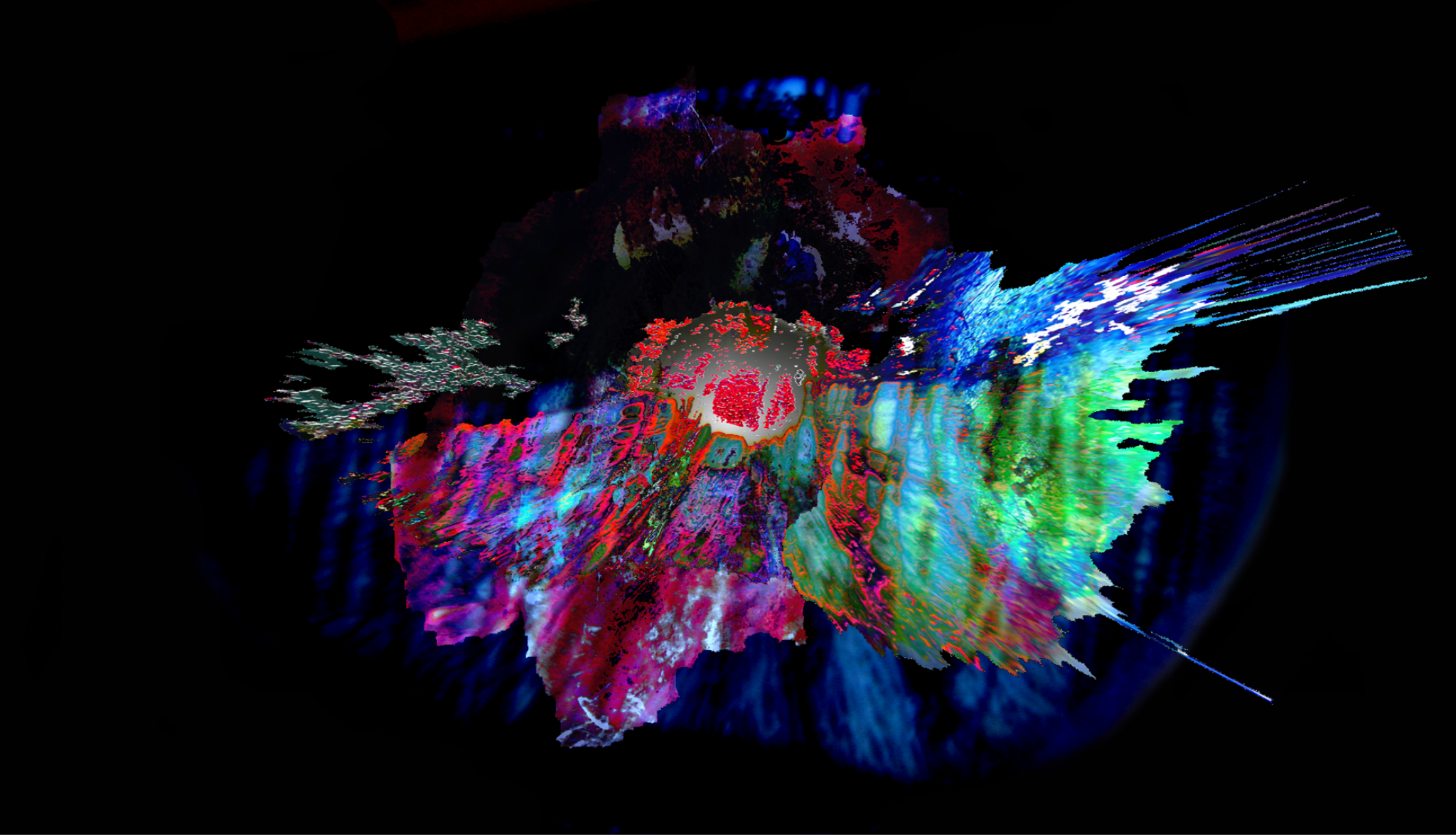












Dissemination plan for the creation of the Blue Bird satellite, indoors (main hall) / outdoors, Aquitaine Museum in Bordeaux

AQUITAINE MUSEUM BORDEAUX

INSTALLATION - PROJECTION

- Monumental multi-screen projection, quadraphonic sound in the main hall and outdoors at the museum entrance

- Creation of the Blue Bird satellite, June 21, 2007, 2000 people



International Institute for Innovation, Artistic Creation and Research

institut international pour l'innovation, la création artistique et la recherche

MUSEE D'AQUITAINE /3ICAR



Projection monumentale
son et image de synthèse

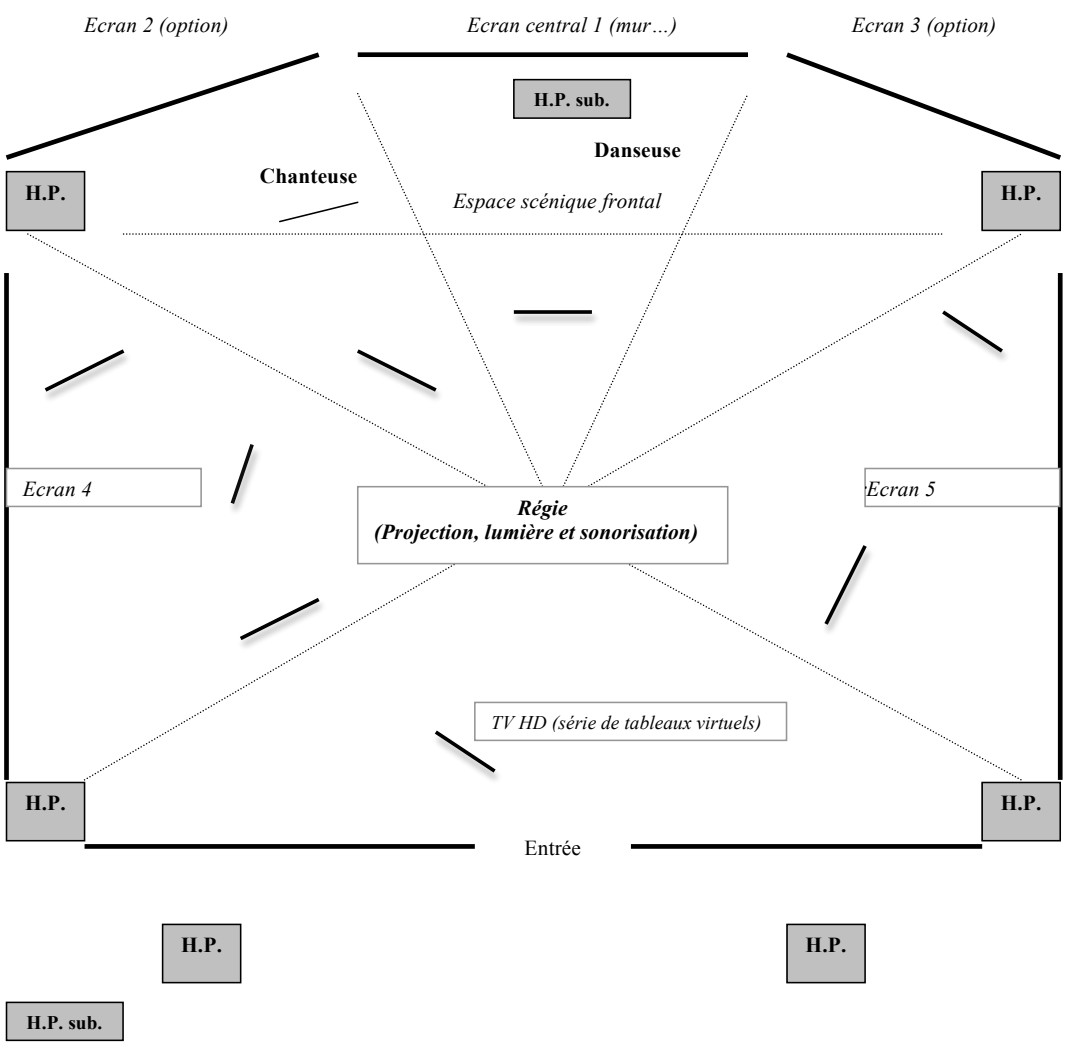
21 JUIN 2007
22h30 – 23h00

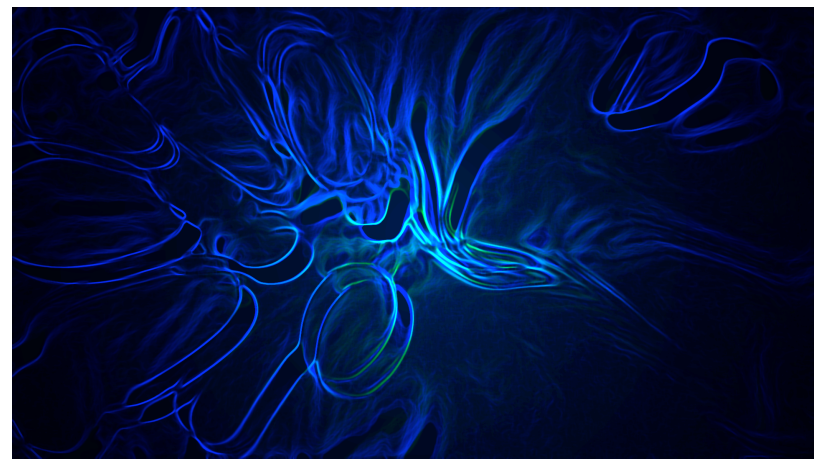
Création mondiale de *Blue bird*
Stéphane de Gérando
œuvre multimédia

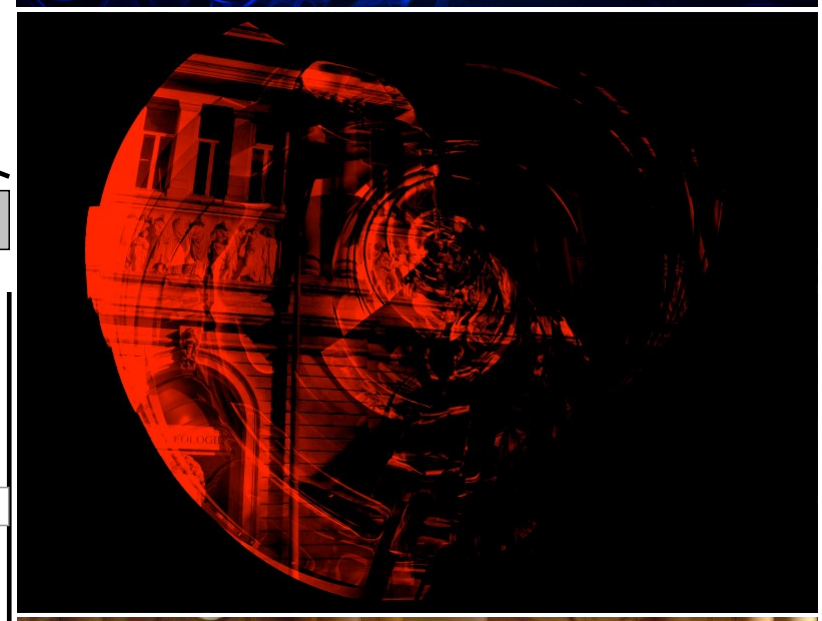
3icar (Institut International pour l'Innovation, la Création Artistique et la Recherche)
Tél. : 0 874 494 941- site www.3icar.com - email 3icar@3icar.com
Siret 488 410 176 000 17 – APE 913 E

The labyrinth of time

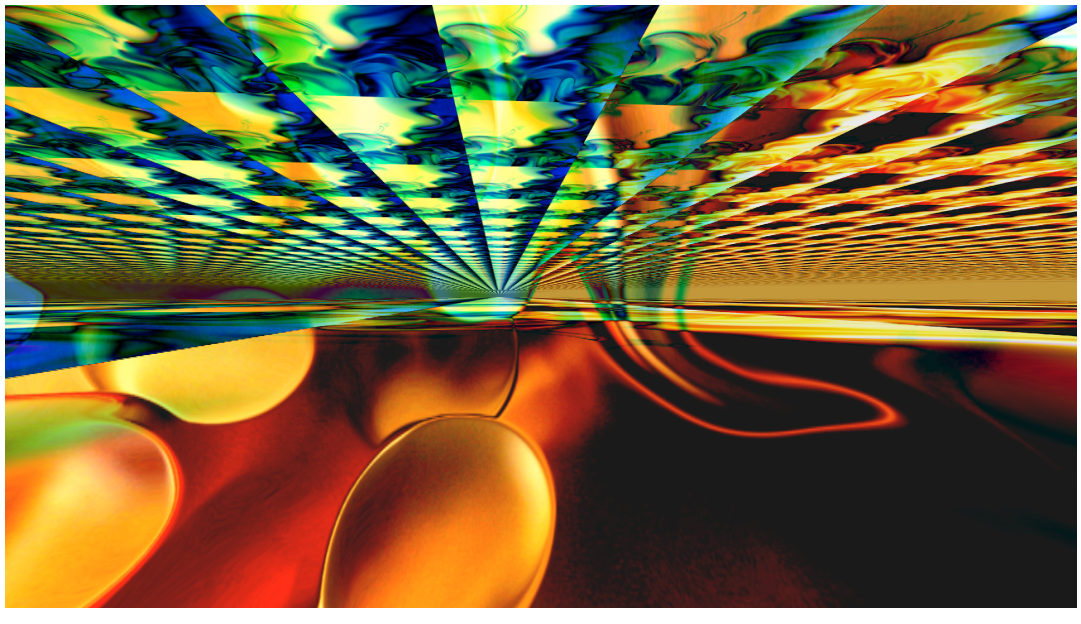
Fiche technique
Exemple d'installation
Création de Blue Bird, Musée d'Aquitaine, Bordeaux
Fête de la musique, 21 juin 2007, 20h -23h











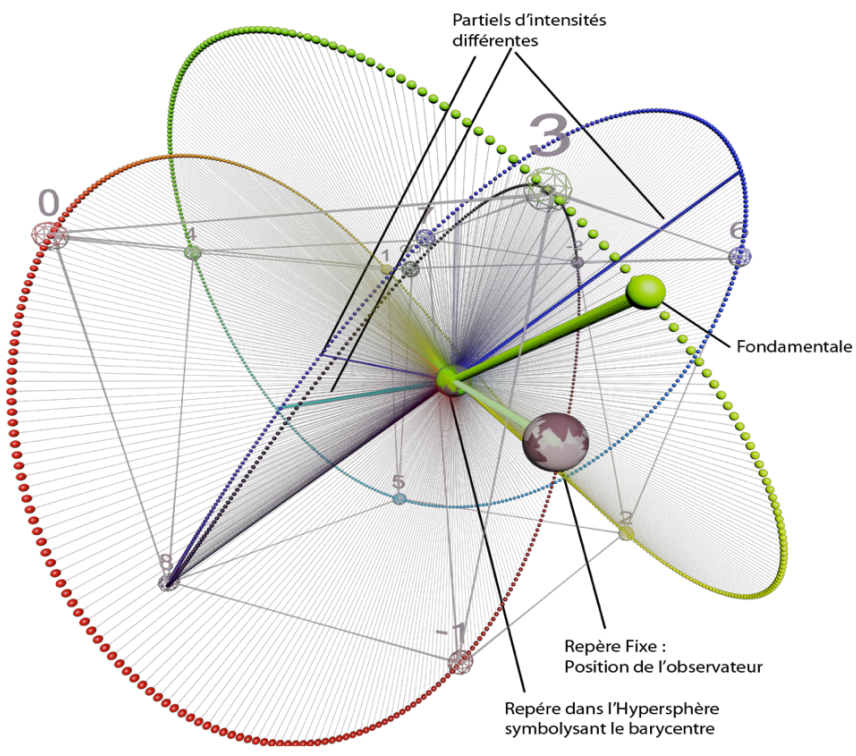


4

WORLD PREMIERES PUBLICATIONS

AESTHETIC CONSIDERATIONS AND SCIENTIFIC RESEARCH

The work addresses contemporary and even "universal" issues: the bifurcated relationship between chance and determinism, the question of non-repetition and entropy, the delicate links between the invention of the microcosm and the macrocosm, the questioning of deterministic certainties, new combinations of distances, the overcoming of thresholds and speeds of cognitive assimilation, the complexification of polymorphic and maximalist writings, the composition of post-relativistic space-times, the search for a metalanguage or expression of a "whole", the translation of the principles of sensory entanglement (several "contradictory sensations" at the same time), an aesthetics of chaos, the role of automatic and interactive processes in the renewal of the imagination in our time…



Successive world firsts (see list of publications), more than 1000 artistic or scientific collaborators have already participated in the development of this monumental work, researchers from the CNRS, the atomic energy center, universities, research laboratories, grandes écoles..., dance and theatre professionals, pupils or students in the context of educational experiments or creations in interaction with the computer...



IRCAM, May 4, 2012, conference by Gilles Baroin and Stéphane de Gérando, "The Hypersphere of Spectra," Mathematics and Music

WORLD PREMIERE LINKS LDT

• With Franck Jedrzejewski of the French Alternative Energies and Atomic Energy Commission (CEA), homometric ensembles modulo 24, creation of Homometric attractors for real-time algorithm, two dancers and instrumental ensemble (Paris 2014)

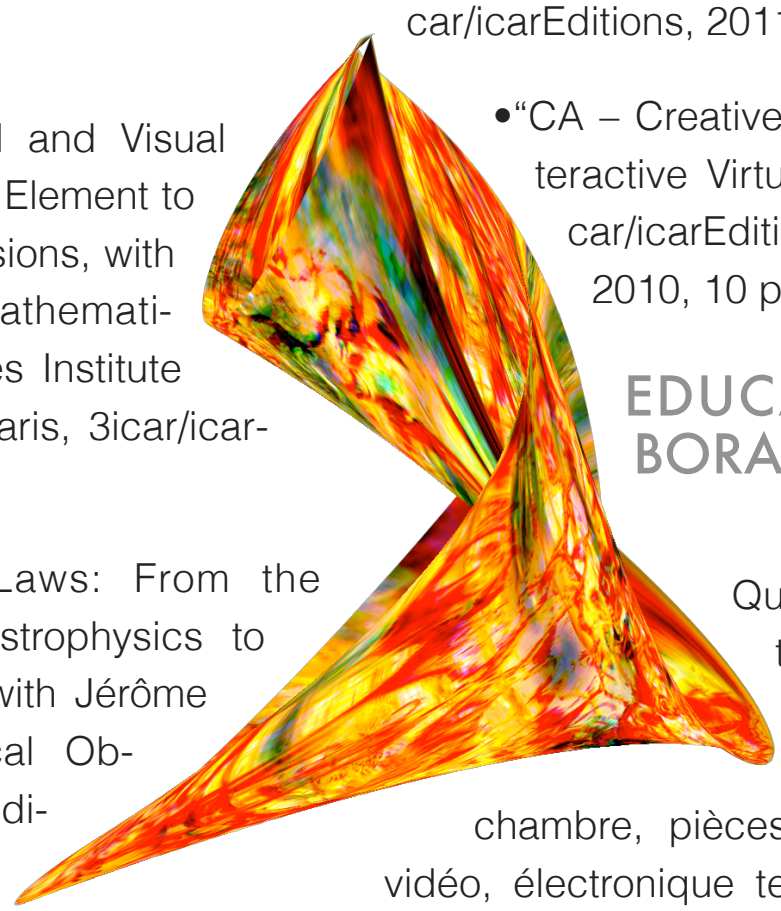
• With Louis Bigo (computer scientist, IRCAM collaborator), Series of all intervals in an octave and in a zigzag pattern (STIOZ), series of all intervals nested within a micro-interval series (STISMI), creation of Tempus est, for two Franco-German wind orchestras and electronic bells (2015) and Le Chant des STISMI, for 30 flutes and real-time electronics (2016)

• With Gilles Baroin, PhD and engineer, invention of a spectral model for 4-dimensional analysis, the hypersphere of spectra, presentation at the IRCAM MAMUX 2012 conference.

PUBLICATIONS - CNRS, CEA, LABORATORIES OF MATHEMATICS, COMPUTER SCIENCE, ASTROPHYSICS

•Fiber-like Space and Sound and Visual Composition: From the Simple Element to Hidden and Entangled Dimensions, with Christophe Mourougane (mathematician, researcher at the Rennes Institute of Mathematical Research), Paris, 3icar/icarEditions, 2015, 13 pp.

•Five Relativistic Artistic Laws: From the Concept of Spacetime in Astrophysics to Sound and Visual Invention, with Jérôme Pétri (Strasbourg Astronomical Observatory), Paris, 3icar/icarEditions, 2015, 17 pp.



•Euclidean Geometry and Sound and Visual Artistic Creation, with Athanase Papadopoulos (CNRS), Paris, 3icar/icarEditions, 2015, 11 pp.

•Homometric Sets and Contemporary Sound and Visual Creation, with Franck Jedrzejewski (CEA), Paris, 3icar/icarEditions, 2014, 12 pp.

•Introduction to The Labyrinth of Time, Paris, 3icar/icarEditions, 2013, 18 pp.

•Stéphane de Gérando / Gilles Baroin, “Sounds and Visual Representation in Hyperspace: The Hypersphere of Spectra,” The Notebooks of the International Institute for Innovation, Artistic Creation and Research, Paris, 3icar/icarEditions, 2012, 15 pp.

•“Introduction to Topological Art: Mathematical Concepts and Musical Creation or Poly-Art,” The Notebooks of the International Institute for Innovation, Artistic Creation and Research, Paris, 3icar/icarEditions, 2011, 13 pp.

•“CA – Creative Algorithm – Real-Time Interactive Virtual Artwork,” Bordeaux, 3icar/icarEditions, 2007 – 2nd edition 2010, 10 pp.

EDUCATIONAL COLLABORATIONS

Quelques chiffres et informations dans ce cadre : 15 créations - orchestre, chœur, musique de chambre, pièces solistes, théâtre, danse, vidéo, électronique temps réel, 300 musiciens, 40 enseignants et musiciens professionnels, plus de 3000 spectateurs, collaborations avec éducation nationale, cité de la musique, conservatoires, écoles d’arts, commande d’Etat, jumelage franco-allemand, soutien SACEM, 3icar, ateliers recherche et création...

CYCLES: LABYRINTH OF TIME

Creation of cycle 10 programmed for February 9, 2019, Stellar wave, LDT installation and a 2-hour performance, multi-screen device, dance, theatre, 30 musicians, real-time electronics and algorithms with real-time interaction (sensors).

Sound and Visual Objects (SVO) in n Dimensions in the Labyrinth of Time

Stéphane de Gérando[1][0000-0001-6078-7050] and Gilles Baroin[2][0000-0002-0134-5188]

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sdegerando@gmail.com
[2] Researcher, LLA-CRÉATIS (EA 4152), Université Toulouse, France
gilles@baroin.org

Abstract. This research explores a component of the *Labyrinth of Time* (LDT), a polyartistic work by composer-researcher Stéphane de Gérando. The LDT integrates collaborations into its theoretical and experimental development phases, including work with Franck Jedrzejewski and Christophe Mourougane (homometric sets), Jérôme Pétri (relativistic spacetime), Louis Bigo (STIOZ, STISMI), and Gilles Baroin (hypersphere of spectra). Several of these collaborations have led to world premieres. To broaden the perceptual and compositional horizon, de Gérando introduces the concept of the n-dimensional polysensory hyperobject (HOPS), defined both mathematically and perceptually through control parameters engaging the five senses within an interactive immersive space. These hyperobjects encompass sound and visual objects (SVO), the principal challenge being to compose n correlated or decorrelated dimensions. This article provides a overview of this research since 2014 (*Homometric Attractors*). Subsequently, de Gérando restates the definitions of HOPS and SVO, and Baroin presents perspectives on transposing SVO into virtual reality within a four-dimensional geometric space.

Keywords: Sound and Visual Objects · *Labyrinthe du temps* · *Labyrinth of Time* · Virtual Reality · Homometric Sets · Multidimensional Space · Algorithmic Composition · Polysensory Hyperobject

1 Homometric Attractor, Work of the Labyrinth of Time[1] [1]

Let us cite excerpts from the article Homometric Sets and Contemporary Sound and Visual Creation, co-written by Franck Jedrzejewski and Stéphane de Gérando in 2014

[1] "*The Labyrinth of Time*, a monumental work": Arnaud Merlin's broadcast on France-Musique Radio-France Paris, Excerpt from *The Labyrinth of Time*: *Day of the Dead*. YouTube video, https://youtu.be/lmO8g8Ug0Ww /last accessed 2026/01/25.

5

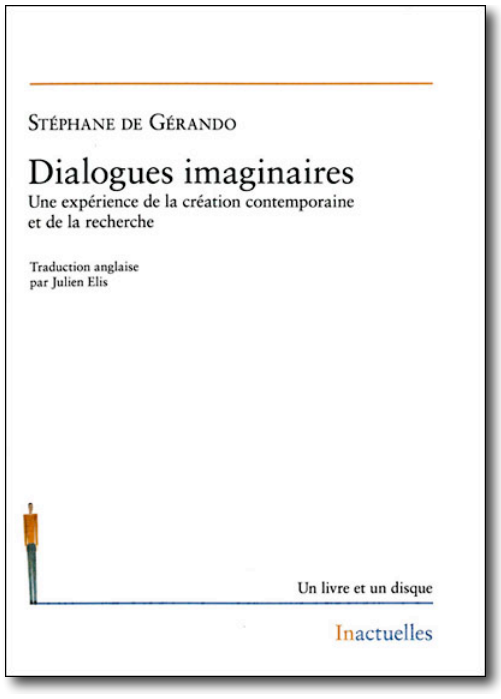
REFERENCES

Je suis chaos.

I am chaos.
Soy caos.
Ich bin chaos.
Ես քաոս եմ.
我是混沌一团。
나는 혼돈이다.
私は混沌である。
من هرج و مرج هستم.
Я хаос.

PUBLICATIONS

Books





- *The Labyrinth of Time (art book, computer graphics, and texts by Stéphane de Gérando), Paris, 3icar/icarEditions, 2013, 78 pp.*
- *Contemporary Musical Works Tested by the Concept, preface by Paul Méfano, afterword by Jean-Yves Bosseur, Paris, L'-Harmattan, 2012, 226 pp.*
- *Imaginary Dialogues: An Experience of Contemporary Creation and Research, Paris, Inactuelles, 2010, 150 pp. This book is accompanied by a monographic CD, in collaboration with Radio France, MFA, 3icar – icarEnsemble, Inactuelles, 2010. Imaginary Dialogues: Experiencing Contemporary Creation and Research, Paris, Inactuelles, 2010, 150 pp. – English translation by Julien Elis.*
- *Oblique Trajectory, 3icar icarEditions, 2006, 140 p.*
- *Contingency and Procedural Determinism Applied to Computer Sound Synthesis and Musical Writing, Villeneuve d'Ascq, Septentrion - Presses Universitaires, 1998, 470 p.*

Articles

- *Tempus est and Le Chant des STISMI, from the algorithmic invention of the material to the creation of the musical work. Series of all intervals in an octave and in a zigzag pattern (STIOZ), series of all intervals nested within a micro-interval series (STISMI), with Louis Bigo, Paris, 3icar/icarEditions, 2016.*
- *Fiberglass space and sound and visual composition. From the simple element to hidden and entangled dimensions, with Christophe Mourougane (mathematician, researcher at the Rennes Institute of Mathematical Research), Paris, 3icar/icarEditions, 2015, 13 pp.*
- *Five relativistic artistic laws. From the concept of space-time in astrophysics to sound and visual invention, with Jérôme Pétri (Strasbourg Astronomical Observatory), Paris, 3icar/icarEditions, 2015, 17 pp.*
- *New polyartistic and technological practices. Rules for Interpreting the Theatre and Dance of the Labyrinth of Time, Paris, 3icar/icarEditions, 2015, 21 pp.*
- *Euclidean Geometry and Contemporary Sound and Visual Artistic Creation, with Athanase Papadopoulos (CNRS), Paris, 3icar/icarEditions, 2015, 11 pp.*
- *Homometric Ensembles and Contemporary Sound and Visual Creation, with Franck Jedrzejewski (CEA), Paris, 3icar/icarEditions, 2014, 12 pp.*
- *Alain Bancquart or the Work as Ethical and Political Expression, Paris, 2014. Address published by Mediapart on November 8, 2014, and delivered by Stéphane on November 6, 2014, on the occasion of Alain Bancquart's eighteenth birthday, at the invitation of the Centre for Documentation of Contemporary Music in Paris.*
- *Twelve Challenges for Artistic Creation in the 21st Century: What Science Could Contribute to the Imagination, Paris, 3icar/icarEditions, 2014, 5 pp.*
- *Composing?, Paris, 3icar/icarEditions, 2014, 8 pp.*
- *Introduction to The Labyrinth of Time, Paris, 3icar/icarEditions, 2013, 18 pp.*
- *"The Act of Creating or Delaying Death: Based on an Interview with Alain Bancquart," Musical Education, no. 576, Paris, Vernon, Beauchesne, 2012, 7 pp.*
- *Stéphane de Gérando / Gilles Baroin, "Sounds and Visual Representation in Hyperspace: The Hypersphere of Spectra," *Les Cahiers de l'Institut International pour l'Innovation, la Création Artistique et la Recherche*, Paris, 3icar /icarEditions, 2012, 15 pp.*
- *"Presence and Absence of Creation," *The 3icar Journal*, Paris, 3icar /icarEditions, 2012, 18 pp.*
- *Stéphane de Gérando – IDEAT CNRS / Athanase Papadopoulos – IRMA CNRS UDS, "Introduction to Topological Art: Mathematical Concepts and Musical Creation or Poly-Art," *Les Cahiers de l'Institut International pour l'Innovation, la Création Artistique et la Recherche*, Paris, 3icar /icarEditions, 2011, 13 pp.*
- *CA – Creative Algorithm – Arts-Sciences Research Project, real-time, multi-sensory algorithmic work, Paris, 3icar IcarÉditions, 2007 – 2nd edition 2013, 22 pages.*
- *"Non-repetition and contemporary musical works. Based on the piano works of Arnold Schoenberg," L'Éducation musicale no. 507/508, Vernon, Beauchesne, 2006, 10 p.*"

- The Notion of Apogee in Brian Ferneyhough's Lemma-Icon-Epigram," The Apogee, Cahiers du Laboratoire Pluridisciplinaire de Recherches sur l'Imaginaire appliquées à la Littérature (L.A.P.R.I.L.), Bordeaux, Eidôlon, 2004, 18 pp.
- "Musical Creation, Research, New Digital Technologies, and Institutions," Les cahiers d'A.R.T.E.S., Bordeaux, C.A.P.C., 2004, 10 pp.
- "The Notion of Frontier in Musical Works After 1945: Reality or Utopia?" - Examples from Ikhoor by Iannis Xenakis, Anahit by Giacinto Scelsi, and 4'33 by John Cage," Frontiers and Thresholds, Cahiers du Laboratoire Pluridisciplinaire de Recherches sur l'Imaginaire appliquées à la Littérature (L.A.P.R.I.L.), Bordeaux, Eidôlon, 2004, 15 pp.
- "On the work for tape only and the musical writing of Jean-Claude Risset" (1/2), Musical Education no. 507/508, Vernon, Beauchesne, 2003, 10 pp.
- "On the work for tape only and the musical writing of Jean-Claude Risset" (2/2), Musical Education no. 509/510, Vernon, Beauchesne, 2004, 4 pp.
- "Sound Virtuality and Musical Writing: Towards an Algorithmic Creation of Timbre," Analyse Musicale, no. 48, Paris, A.D.A.M., 2003, 15 pp.
- "Computer Sound Synthesis Models – Presentation of Digital Synthesis Techniques and Introduction to an Aesthetics of Synthetic Timbre," Analyse Musicale, no. 47, Paris, A.D.A.M., 2003, 13 pp.
- "The Presence of Popular Repertoire in Western Art Music – Reference Points Concerning the Contemporary Period," L'Éducation musicale, no. 499, Vernon, Beauchesne, 2003, 6 pp.
- "Four Variations on a Death Foretold – Reflecting on the Existence of Contemporary Opera After 1978," Analyse musicale, no. 46, Paris, A.D.A.M., 2003, 10 pp.
- "Separating to discover an imaginary – The experience of a musical writing" Imaginary and unconscious no. 8, journal of psychotherapeutic studies, Bègles, L'Esprit du Temps, 2002, 6 p.

Dictionary

- *Dictionary of Music and Dance, Paris, Larousse – Bordas, 1999, 10 p. : Bussotti Sylvano, p. 78, Carter Elliott, p. 84, Janacek Leos, p. 223, Jolivet André, p. 226, Kodaly Zoltan, p. 238, Part Arvo, p. 328, Schaeffer Pierre, p. 382, Schnittke Alfred, p. 384, Varèse Edgar, p. 429, Zimmermann Bernd-Aloïs, p. 455*

Book signings, conferences, symposiums

- "Automated Score Tracking and Cycle 6 of The Labyrinth of Time," International Symposium on Digital Technology, presentation with José Echeveste (Collège de France/IRCAM), October 8, 2015.
- Presentation and book signing of two works by Stéphane de Gérando: Contemporary Musical Works Tested by Concept and Imaginary Dialogues, Librairie l'Harmattan, Paris, Thursday, February 21, 2013.
- Lecture "The Hypersphere of Spectra," with engineer Gilles Baroin (University of Toulouse), MaMuX seminar (mathematics and music) at IRCAM, May 4, 2012.
- Interview with Jean-Pierre Derrien for the presentation and book signing of the monograph and CD Imaginary Dialogues, Librairie Tschann, Paris, May 3, 2011.
- Lecture "Music and Topology of Space," Symposium on Mathematics and Music, Institute of

Mathematical Research Advance, University of Strasbourg CNRS, October 2, 2010.

- Since 2006, conferences as part of the Innovation and Creation Festival, presentation of the CA project, creative algorithm, educational activities… (Lists and videos 3icar.com)
- "Musical Creation, Research, New Digital Technologies, and Institutions," ARTES International Symposium, University of Bordeaux III, on the 1970s, Museum of Contemporary Art of Bordeaux (CAPC), January 2003.
- "Musical Creation, Research, New Digital Technologies, and Institutions," ARTES International Symposium, University of Bordeaux III, on the 1970s, Museum of Contemporary Art of Bordeaux (CAPC), January 2003.
- "The Notion of Apogee in Brian Ferneyhough's Lemma-Icon-Epigram," International Symposium: The Apogee, Multidisciplinary Laboratory for Research on the Literary Imagination - University of Bordeaux III, March 4-6, 2004.
- "The Notion of Borders in Musical Works After 1945: Reality or Utopia?" “Ikhoor by Iannis Xenakis, Anahit by Giacinto Scelsi, and 4’33” by John Cage,” International Symposium “Frontiers and Thresholds” organized by the Multidisciplinary Laboratory for Research on the Literary Imagination – University of Bordeaux III, March 27, 28, and 29, 2003.
- “From Serial Music to Spectral Music,” Musée d’Aquitaine, Museum Lecture Series, April 7, 2005.
- “Mauricio Kagel,” roundtable discussion with the composer, organized by the Bordeaux Conservatory. Moderators: J. Y. Bosseur, J. L. Portelli, S. de Gérando, January 28, 2005.
- Major Aesthetic Movements in the 20th Century, Continuing Education for Library and Media Center Managers (Local Government Employees), National Center for Local Government Training (CNFPT), Angers, November 25-26, 2004.
- Introduction to 21st-Century New Technologies, Continuing Education in Aquitaine: Lecture Series 2000-2005.
- Piano Writing and New Technologies, Preparation for the Certificate of Aptitude (CA) for Piano Teachers (training organized by the Ministry of Culture and the Aubervilliers Regional Conservatory), April 5, 1998.
- Musical Coherence, Writing Techniques, and New Technologies, Lecture Series for Composition Students, Paris National Conservatory of Music, November 1996.
- Computer Sound Synthesis and Musical Writing, IRCAM – Lecture given in collaboration with scientist Laurent Pottier, IRCAM Projection Space, January 1993 – IRCAM recording



6

REACTIONS

Excerpts from initial reactions to the Vertical Memory cycle

Damien Michel, French pianist, performer of the premiere at Radio France (Paris) of Metathesis, one of Stéphane de Gérando's early works.

Purity. Journey. Finesse. – three words to describe Verticale Mémoire, Stéphane de Gérando's electroacoustic cycle, a totality, a journey that cannot be defined in fragments of time but rather in a holistic way, like an intrinsic detachment or distance to enter the heart of listening. No trace of duality or binary world – no good or evil: it is another dimension. This music represents a vertical abyss of tranquility and universal peace. With a quiet strength, Stéphane de Gérando carries us into his Labyrinth, or rather, our own labyrinth. Space, in all its immensity, is offered to us in great, enigmatic, yet self-evident bursts. The mastery of the constituent elements of the discourse (timbres, rhythms, balances, durations, space, technologies…) brings us a wealth of images, a direct expressive trajectory that touches on the essential, without embellishment, without superfluity. An impression of lightness (a tendency towards absence) adds another dimension to this refined listening experience, born of virtuoso writing. In the final section, Algorithmique grand cycle, everything that came before seems to have vanished, consumed, absorbed; only a floating sensation in space and time remains. This section itself seems to disappear, perhaps serving as the key to entering or exiting another labyrinthine space… Decades of research, blending numerous scientific disciplines studied by Stéphane de Gérando, are evident in this album, drawing us into a bottomless abyss.

Karan Salajegheh, Iranian composer, who, along with Behjat Kariman and Stéphane de Gérando, created the monumental projection of The Labyrinth of Time on Tehran's Azadi Tower, presents Verticale Mémoire, an electroacoustic cycle of The Labyrinth of Time by Stéphane de Gérando. This work seems impossible to imagine and therefore impossible to anticipate at any given moment. We experience a joy in listening to the progressive discovery of the piece through a dual sense of disconnect and coherence. The listener feels that this work is part of an even larger whole. There is a coexistence between the cosmos and grains of space-time from which this cosmos is an expansion. Here, we lose a purely chronological reading of events, like our life images, which include the projection and reflection of memory at every moment of existence.

Kaori Tsustsui, Japanese composer

From 2014 to 2021, I had the privilege of hearing and experiencing the Labyrinth of Time (concerts and lectures). This monumental work is in perpetual change, development, and evolution. Time, space, infinite mobility, sensitivities, transparency, unease… as soon as I encounter the sound of Verticale Mémoire, I am “trapped,” I travel through time and space, I descend into the Labyrinth…

Ling Chen Lylia Fang, Taiwanese flautist

Listening to Stéphane de Gérando's Verticale Mémoire, one senses a coherence that runs through both the work as a whole and each independent piece (the LDT satellites), the whole coexisting in a grand unity. Titles are evocative, such as Théâtre du Labyrinthe, the visual sensation of being in a theater, or Day of Dead, with its stillness, as if suspended, frozen... In Horizon chaotique, the singer's ever-diversifying timbres give the feeling of a vocal movement where anything is possible: temporal gestural sounds, the expression of a chaotic state, a chaotic phenomenon. The voices and instrumental sound of La mique, for their part, trace independent linear movements, with or without direction, in progression; the monologue of each part becomes, at the signal of an interaction between instrument and voice, a conversation, a dialogue. More broadly, in this work, voices combine with technological fluidity, diverse emotions, and sensitivity… listening, feeling, perceiving, gradually discovering ideas, messages… “so let’s enjoy the music…” embarking on a musical journey, imagining…

Liburn Jupoli, Albanian composer and researcher from Kosovo, political advisor to the Ministry of Culture, Youth and Sports of Kosovo, Director of UBT-CMMDPM Center for Modern Music, Production and Digital Management

Stéphane de Gérando's work, Verticale mémoire, is filled with bursts of color and breath. His detailed and profound understanding of timbre from both an acoustic and digital perspective blends with a musical awareness that is the equivalent of a real and virtual hybrid world. The work we hear represents both a continuation of 20th- and 21st-century traditions with pioneering creators such as Edgard Varèse, Karlheinz Stockhausen, Pierre Boulez, and Alain Bancquart, and a new approach to creation—a visceral and rich approach, sensorially realized toward a universal connection between the spirit and current humanist developments. In addition to its clear and powerful conceptual method, the work demonstrates the composer's ability to imagine, synthesize, and deconstruct a musical world. The multidisciplinary nature of Labyrinthe du temps also has pedagogical value, serving as an example of a holistic approach to the arts. Stéphane de Gérando's pedagogical practice also incorporates this holistic aspect, where the arts are seen as a unified form of human expression, existing on separate yet coexisting planes and contributing as a single entity from a common source. With its wide range of expressive qualities, complex structures, constantly shifting states, and multitude of vertical and horizontal musical planes, Verticale mémoire is a curious and beautiful work to discover.

“A new generation of artwork controlled and invented in real time by algorithms.”

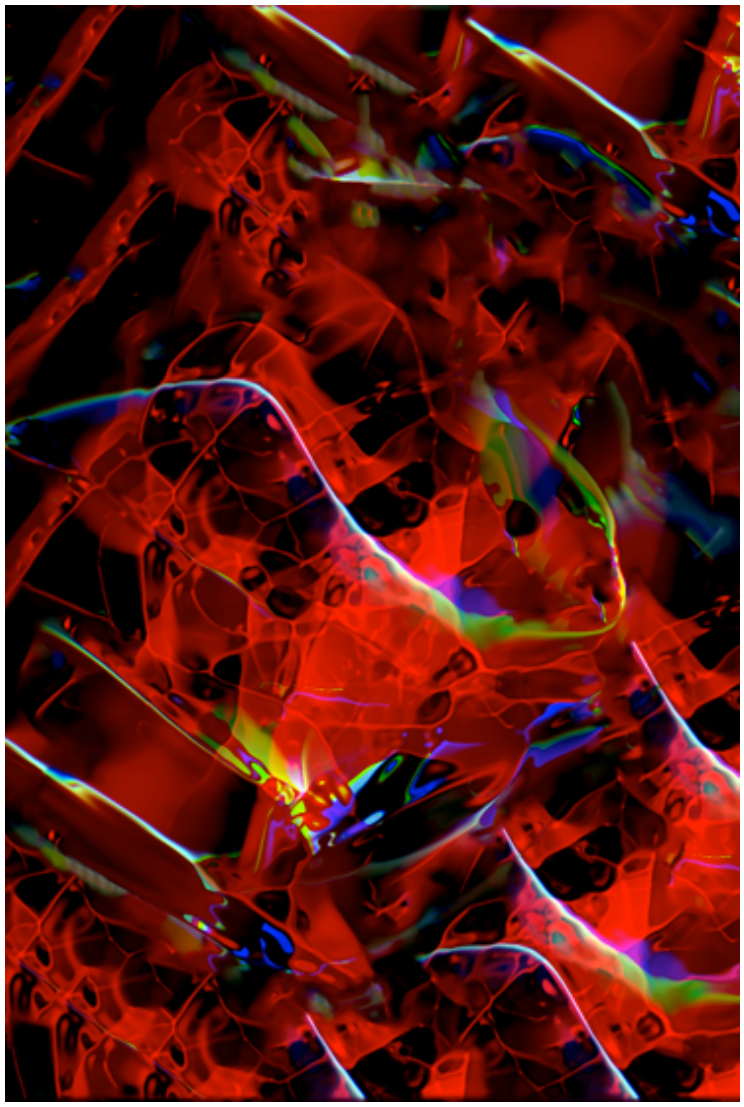
“A dazzling display of sonic and visual events and sensations.”

“Labyrinthine and chaotic trajectories through the space-time continuum of memories.”

“World premieres in art and science.”

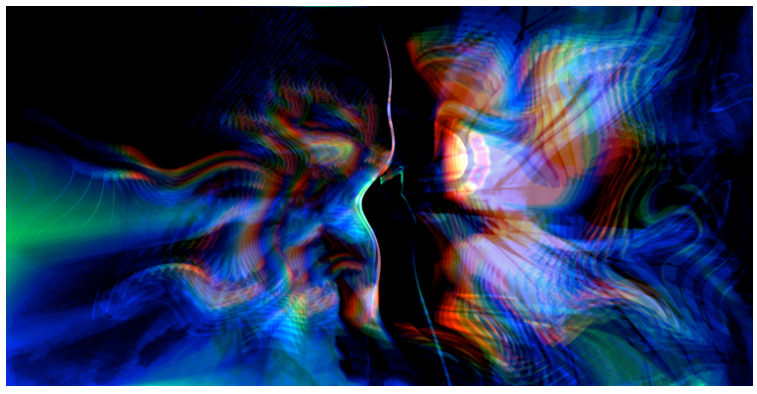
“More than 200,000 computer-generated images, high-definition multichannel sound spatialized around the audience, real-time electronics and music, digital art and sculpture, dance, and labyrinthine theater.”

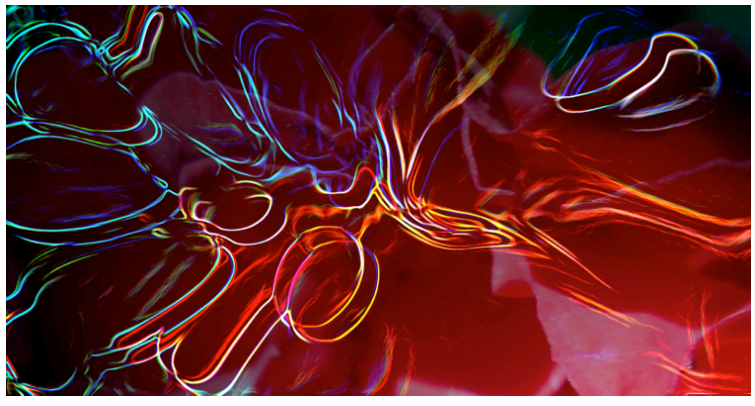
“The search for a unifying whole or multi-sensory metalanguage.”

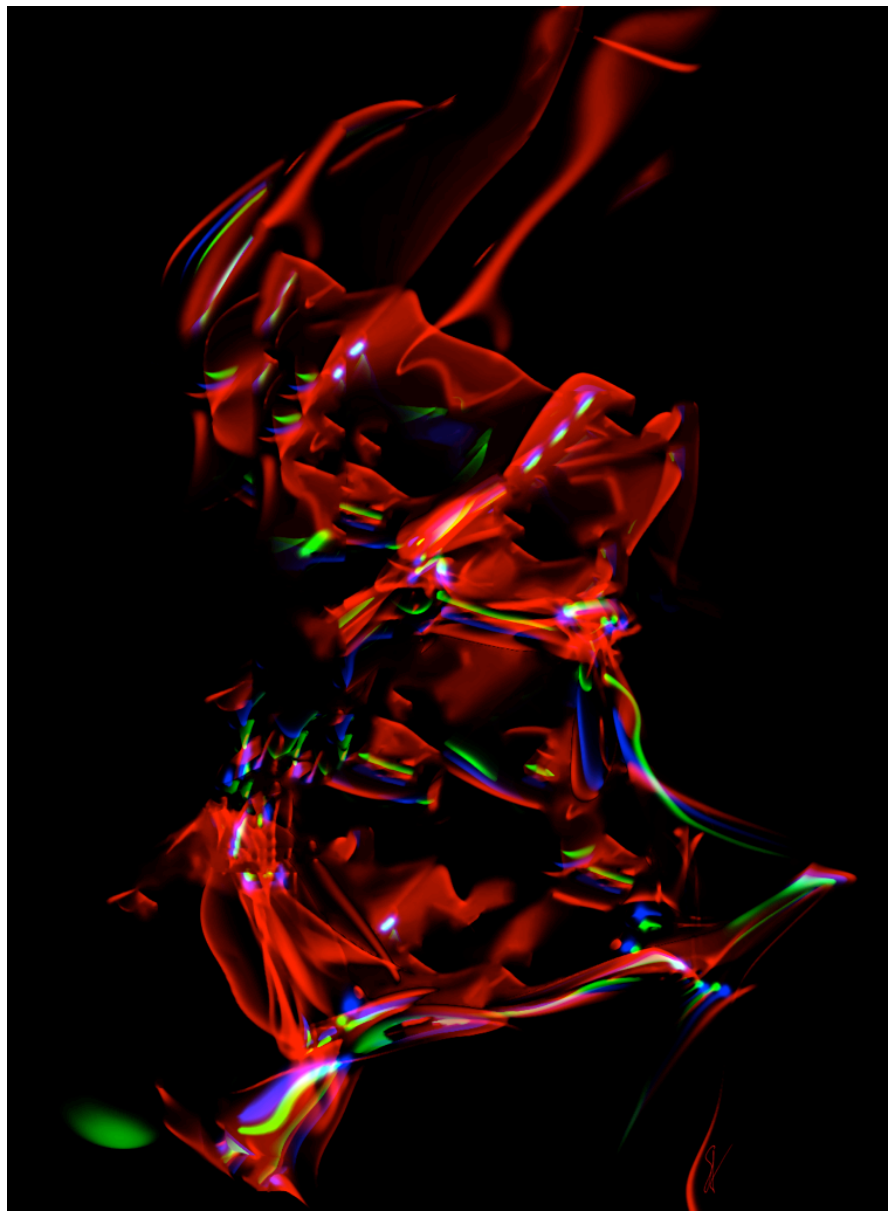


Excerpts from audience comments during the creation of the Circle of the Sphere for video and actor, December 6, 2012 at the 3icar Innovation Creation Festival in Paris (3icar video recording)









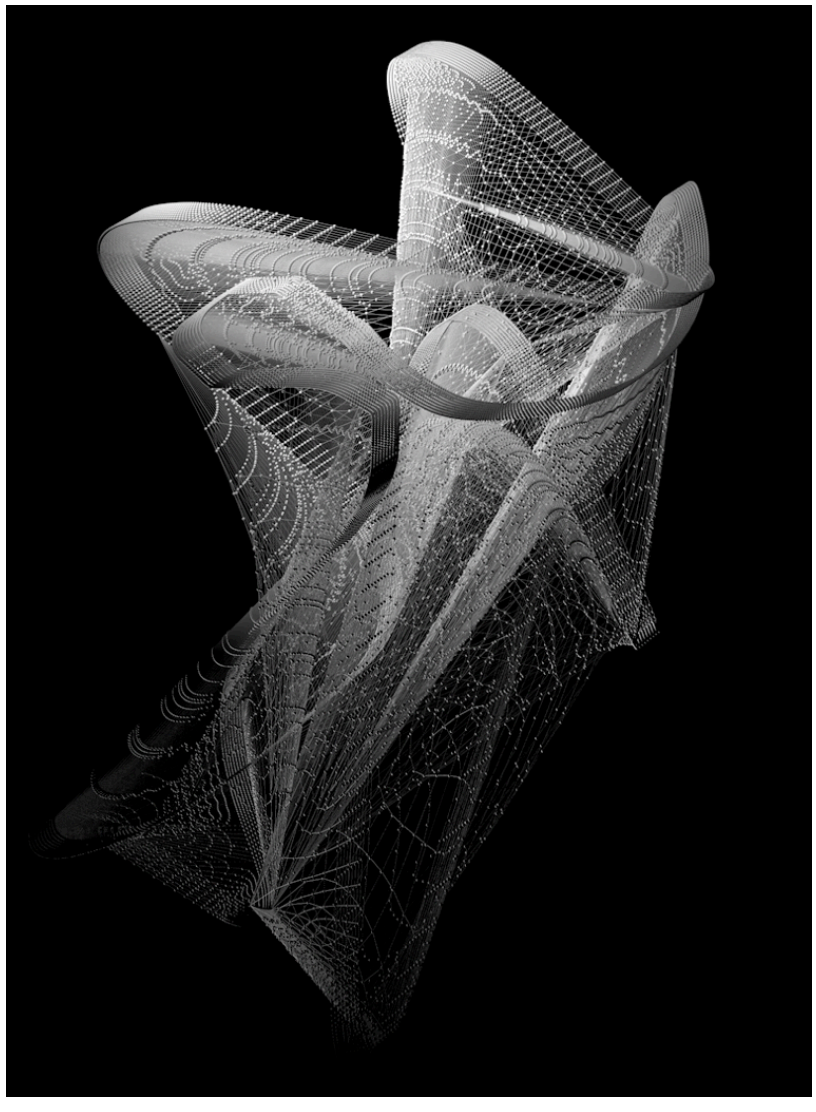
"This work explores the inner world of each individual, their lived experience; it recreates the listener through everything they have lived through, everything they have suffered, the dissolution of the self, for me."



“These round units were like words, they leaped together, like sentences or cells assembling…”

“For me, it was completely extraordinary, the first phase with these words and this expressive force that calls out to us; we search for a connection between these words and find a meaning that is entirely ineffable.

The second part arrived unexpectedly, with these images… and it’s the same; I am still completely overwhelmed by this quest for meaning, for significance…”





Another creation from The Labyrinth (with dance, image and sound), audience reactions, 3icar recording, June 6, 2018

“I felt a stimulation/energizing effect on an intellectual level; I can tell you I loved it. The sound converged and then diverged, which reminded me of the Big Bang, or the transition from a three-dimensional universe to higher dimensions. I think the algorithm's calculations involved matrices of more than four dimensions.

It's extraordinary because in mathematics, you can't feel that; you do it in a detached way.

I'm an engineer in the field of electromagnetic fields, and we also develop algorithms in multidimensional spaces, and I felt this multidimensional thinking.

Perhaps music can represent a path to enrichment, replacing the problem of visualizing data beyond three dimensions with auditory and visual sensations…

There were rapid transitions from one passage to another, which I really appreciated. We try to imagine the logic, but we should instead consider what the algorithm was trying to tell us.”

There's a statistical reality here, because I think the performance wasn't the same for everyone; each person saw something different.

The fact that the work is unique means we're witnessing something that will never be repeated!...

"It was a machine that created this, not man. Man created the machine, and then the machine... it let go...
After that, where do we go?

The image either gives you confidence or it doesn't; you seek it out, you watch what's happening, you watch the dancers, you listen to the music. You're not forced; that's why I'm talking about trance, because we're experiencing three things at once: the music, the dance, the image... you really have to connect. There was a missing sound."

ENTROPIC FRINGES

Série des tableaux algorithmiques

Le Labyrinthe du temps

Stéphane de Gérando

