

The background is a vibrant yellow color, filled with a repeating pattern of small, blue, hand-drawn squiggly lines. A dark blue grid is overlaid on the background, consisting of a vertical line and a horizontal line that intersect to form four quadrants. The top-left and bottom-right quadrants contain a large white circle, which is partially cut off by the edges of the page. The overall design is clean, modern, and visually engaging.

**Circuit Training
Exhibition Guide**

CIRCUIT TRAINING

Circuit Training

***A foray into the world
of the Large Hadron
Collider***

An exhibition of the University of Applied Arts Vienna (Art & Science and Site-specific Art) in cooperation with CERN (art@CMS and HEPHY – Institute of High Energy Physics).

Opening:

6th June 2017, 19:00

Exhibition:

7th – 17th June 2017,

Tuesday to Friday,

13:00–19:00,

Saturday

12:00–17:00,

and on appointment

Accompanying

programme:

9th June 2017

das weisse haus
Hegelgasse 14
1010 Vienna, Austria

Opening words by:

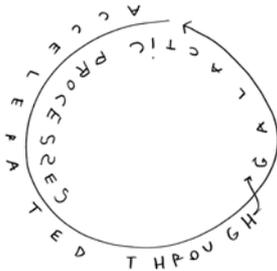
Gerald Bast (President, University of Applied Arts Vienna), Charlotte Warakaulle (Director for International Relations, CERN), Paul Petritsch (Head, Site-specific Art), Virgil Widrich (Head, Art & Science), Bernd Kräftner (Transdisciplinarity, Art & Science), Jochen Schieck (Director, HEPHY) and Michael Hoch (art@CMS).

With works by:

Francesca Aldegani, Golnaz Bashiri, Rosie Benn, Daniela Brill, Andreas Budak, Nora Drumeva, Cansu Ergün, Johanna Folkmann, Athanasios Gramosis, Lukas Gritzner, Natalia Gurova, Rafael Lippuner, Júlia Mag, Marko Markovic, Benedikt Meixl, Frederique Neuts Leroy, Lala Nomada, Marina Rebhandl, Carmiña Tarilonte Rodríguez, Denise Schellmann, Andrea Vezga.

A foray into the world of the Large Hadron Collider

Maybe some of you are familiar with the term 'Circuit Training'. It refers to a programme of physical activities that work each section of our bodies individually. When one circuit of the programme is done, either through coercion or (free) will, we begin the first exercise again for the next circuit. In order to probe the fundamental structure of the universe, physicists have implemented a sophisticated circuit training for the basic constituents of matter: accelerators boost beams of particles to high energies before the beams are made to collide with each other. Detectors observe and record the results of these collisions. We assume that those particles follow the instructions of physicists with a mixture of obedience and free will...



In the context of the cooperation with art@CMS and HEPHY (Institute of High Energy Physics), students of Art & Science and Site-specific Art have explored the many facets that a large and multinational institution like CERN (European Organisation for Nuclear Research) encompasses. The wide-ranging investigations go from the Large Hadron Collider to the small print of politics and economy, from particle accelerators to solid bureaucracy, from the Big Bang to the growth of conspiracy theories. While roaming around CERN and becoming pixel detectors ourselves, several questions started circulating. How do these experiments and the images they produce transcend beyond screens and light beams into different states of matter and the realities we live in? How will our artistic strategies develop in relation to the biggest camera and microscope on our planet? The outcomes are presented in the group exhibition at das weisse haus.

DARK
MATTER

WORKS



© Lukas Gritzner. Production still. Image by the artist.

open up, show me that...

Video installation

Lukas Gritzner

The physicist buttoned down the shirt, for us, to see their explanation of the world.

At least a part of it, printed on a T-shirt.

It was not the first time I've seen something like this.

Like a superhero.



© Lala Nomada. Model for an installation. Image by Brishy Alam.

Pic du Pursuit

*Installation &
performance*

Lala Nomada

"It is impossible that something comes from nothing"

Parmenides

We are a preparation laboratory of the LHC experiment of CERN. Our premise is to understand the beginning in order to know the end. Aiming to rediscover the past, in order to understand the present and calculate the future. Far from Aristotelian scientific philosophy, the five human senses are not accurate enough. Some even became an obstacle. Therefore, we need to neutralize them in order to become super humans with access to specialized instruments. According to Ludwig Fleck, we can discover the truth and preserve it, under the right circumstances.

We will keep the harmony.



The state of the observer

Research Video, Loop

**Johanna
Folkmann &
Rosie Benn**

Reflecting on different statuses of observing. In the context of an open source project like CERN, where do the boundaries begin and end for this scientific setting and its team? How can the scene for a production of knowledge be portrayed and how did our interchanging role as Artist and Tourist at CERN affect this?

Can we think of technology as an isolated product of genius engineering or does the exploitative rabbit in the magician's hat (Hornborg) put a strain on the paradoxical entanglement of progress? How might we position ourselves concerning our own practice in art, science and everyday routine within a complex system of cultural contradictions (Decter)*? All of which are stickily entangled in the artifact network (Hornborg)** and a globalised industry.

* *Decter, Joshua, 'Art is a Problem', Selected Criticism, Essays, Interviews and Curatorial Projects, 1986-2012, Published by JRP | Ringer, edited by John Miller*

** *Hornborg Alf, 'Machine and Machinations: rethinking the ontology of technology', Depot, cooperation with Im_flieger, STOFFWECHSEL and the University of Applied Arts Vienna, 2017*



© Marina Rebhandl. Film still. Image by the artist.

All Beginnings from Before

digital film (10min),
digital sound (50min)

Marina Rebhandl

While listening to excerpts from talks by particle physicists- the images seen within the film may or may not correspond with what is heard. The image sequences gravitate towards questions raised by institutions and scientists working in the field of fundamental particle physics, yet perform their own research - seemingly unbound by the laws of causality. Since the sound and visual material are not linked (but play independently) unexpected collisions and associations may evolve.

Umkehren um 180 oder 360 Grad!!

Audio / Light / textile /
image installation

Moving across the Time vector, living in the moment, synchronously relieving past memories.

Time is dynamic and fluid, its ever-changing. Rotation around an indefinite axis in Space (_ Space analysis).

Moment by moment, cut from the movements of a Place Vector (_ a fractioned Place Vector), Continuing its presence in all time (Multiplication of Time).

Extra Dimensions _ beyond eyes!

Existence beyond reality

or

Reality beyond imagination

or

Reality based on forward steps, stepping simultaneously backwards

Beyond frequency

Beyond space

With lower or higher speed.



© Golnaz Bashiri. Sketches for an installation. Image by Brishy Alam.

Golnaz Bashiri

Audio/Voices:

German (GER):

Gregor Schwellenbach

German (AUS):

Eni Brandner

English: Jack Hildebrand

Italian: Sacha Bovina

Persian: Golnaz Bashiri

Audio script:

selected parts of the book "The Art of Travel" by Alain De Botton.

Advisors: Matthias Fink, Amirali Bashiri



Fruitloop

Installation

Andreas Budak

During our visit to CERN we learned that the CMS detector works like a huge camera, with which distance and weight of individual particles can be measured.

Fruitloop is an experiment, which tries to translate the energy of lemons into a camera in order to take a photograph of the very same set-up. Thus, the apparatus photographs itself.

Zero Sum Medium

Installation with analog TV's, snowing noise, rain fountain

Rafael Lippuner

Not long ago, most of us had a Cosmic Microwave Background detector at home: The analog TV, whose snowing noise is supposedly the echo of the big bang. Just picture it. Therefor expanding this mass communication device to a true medium between the observer and the cosmos. Like the constant irrigation we are used to by any program, the information flow from the universe is constant. In this installation, the noise comes from both side of the screen, as on one side the electron gun is shooting beams through a vacuum onto a glowing layer, while on the opposite side water is dripping like rain. Both come from the sky and equal out each other's chaotic nature, as they meet on the horizon.

Next page: © Rafael Lippuner. Composition of Universe (NASA), raindrops on glass and TV snowing. Image by the artist.





◦ Daniela Brill. Music score. Image by Brishy Alam.

Particle Canticle

Performance, drawings and recorded sound

Daniela Brill

Music: Alejandro Del Valle Lattanzio
Voice: Diego Villegas



◦ A. Gramosis & F. Neuts Leroy. From the game Master of Universe. Image by the artists.

Master of Universe

Computer Game

Athanasios Gramosis & Frédérique Neuts Leroy

Transcribed directly from recorded interviews and lectures held at CERN by scientists, the project is a collection of six canticles (or chants) that explore the poetic world of particle physics. Written by Daniela Brill, composed by Alejandro Del Valle and sung by Diego Villegas, the canticles transform the meaning of the scientific words, turning concepts of physics into objects to be revered.

Reality in CERN and the ATLAS Experiment. What is the myth? What is the reality? These questions were pursued to develop this game and with it we are challenging the gamer's world.

... Do you play? Do you answer smart and quickly? Do you want to win? If yes, you're ready for "the Master of Universe"



© Marko Markovic, excerpt from *Direct Action*. Image by Karl Salzmann.

Direct Action

*Installation/
Performance*

Marko Markovic

Camera: Karl Salzmann

Markovic, acting as a staff member overseeing the positioning of the flags in front of CERN, his intention was to move all flags onto one-half of the field in front of CERN but only managed to move one -the German Flag. This action occurred simultaneously as the Berlin terrorist attack in 2016.

The following day, all other flags were moved in same way by CERN authority - therefore Markovic has influenced this decision behind its administration. But by the third day, security returned the flags to their initial position, as if nothing had happened.

The work brings to light an existing hierarchy between countries involved in CERN, representing power relations on a global scale. Markovic considers this work to be a form of direct action and anarchistic statement.

Resonancia

Poems

Carriña Tarilonte Rodríguez

According to the scientific community, we live in an era of amplified senses and capabilities, which allow us to access realities beyond our macroscopic scale. If passageways to surpass the barriers of complex and overwhelming data could be built, how would these journeys towards extreme points of time and space reflect on us? Openness and transmutation are required to release resonances, echoes floating back, carrying the absurd and the intimate in interaction with scientific outputs, shaping the way we perceive and shape our cosmos.



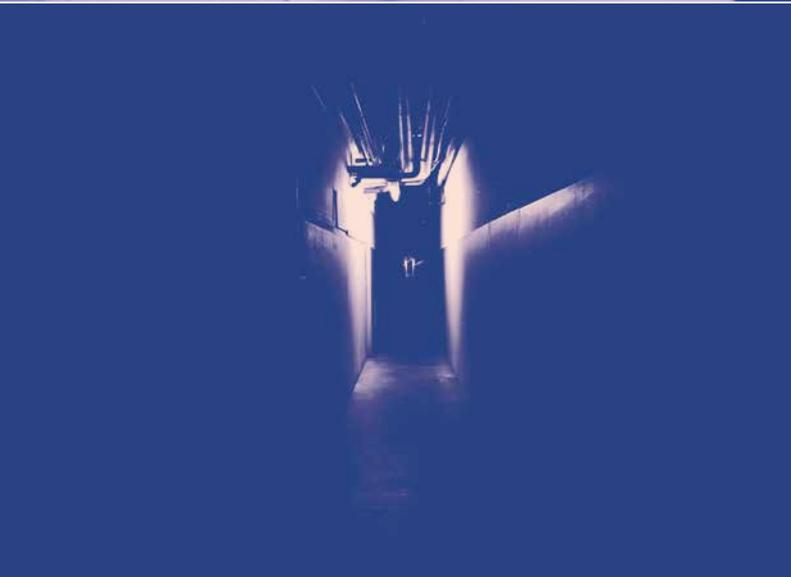
° Denise Schellmann. Model of the installation. Image by Brightly Alam.

reality

Installation

Denise Schellmann

The data recorded from millions of collision events per second is filtered through two major trigger systems to store only hundreds of events for further analysis. Consequently, the results of CERN's experiments depend on computerised algorithms, which value the relevance of the collision events and automatically isolate this data away from becoming potentially important information. Who is aware of the significance of these events, events excluded during the self-created focus of analytic interest? How do filters affect our perception in general? How do you perceive your illusive reality bubble?



° Francesca Aldegani. Image by the artist.

Room 137

Video installation

Francesca Aldegani

[...]The paradox of building huge machines in order to demonstrate the existence of something invisible to human eyes, but through calculations and numbers.

The ultimate inadequacy of common language to describe atomic and subatomic reality.



**20.12.2016/
1227
48,20258 °N
16,374212 °E**

Sculpture

Benedikt Meixl

Benedikt Meixl's work is process oriented. He shows a sculpture, fed by impressions and moments of his stay at CERN. Multiple unintentionally exposed analog photographs, GoPro videos shot while running, and GPS data captured on-site are the raw material of his work. By constantly adding, removing, transforming, and shifting the medium he creates a multilayered object, which is especially generated for its location in the exhibition.

**Chronicae
Aetatis
Hominum
Physicorum**

*Historical primary and
secondary sources, fiction*

Júlia Mag

Chronicae Aetatis Hominum Physicorum is a history textbook presenting an overview of events of the second half of the twenty-first century that lead to the founding of a fictional nation of scientists. However, the border is blurred between what is regarded as valid in the social sciences, i.e., what is supported by sources, and propagandistic endeavors exemplifying the notion that "winners write history." The book exists as a double paradox: first, as the oxymoron of a scientifically presented origin myth; second, as a paradox of times past that might still be in the future.



© Cansu Ergün. 46.3082, 6.04797. Image by the artist.

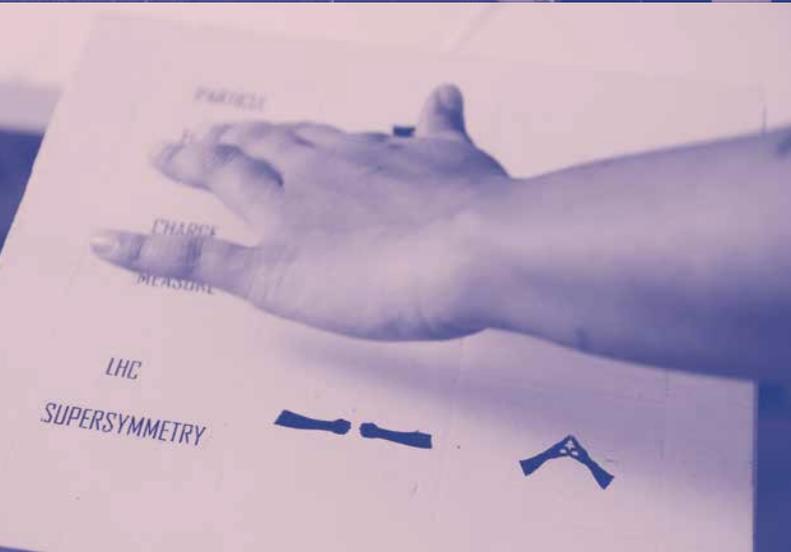
Smile! You're on track

Interactive installation

Cansu Ergün

The Large Hadron Collider (LHC) lies one hundred meters underground, circling twenty-seven kilometers between Switzerland and France, passing unseen under urban and suburban settlements, roads, farms, forests, fields... Although CERN is open to tourists, it is not possible to tour the whole circle of the world's largest machine underground, and it is equally impossible to realize its scale and existence aboveground without information. Thus the starting point of this work was tracking the LHC aboveground on a "field trip" by car during the visit to CERN, following the invisible reflection of the LHC's circle. Each time the road crossed over the circle, documentation was made of the exact point and its surrounding landscape with photos and coordinates.

What if this circle were to become a touristic route? What would the photos taken by tourists look like while they were standing on those points?



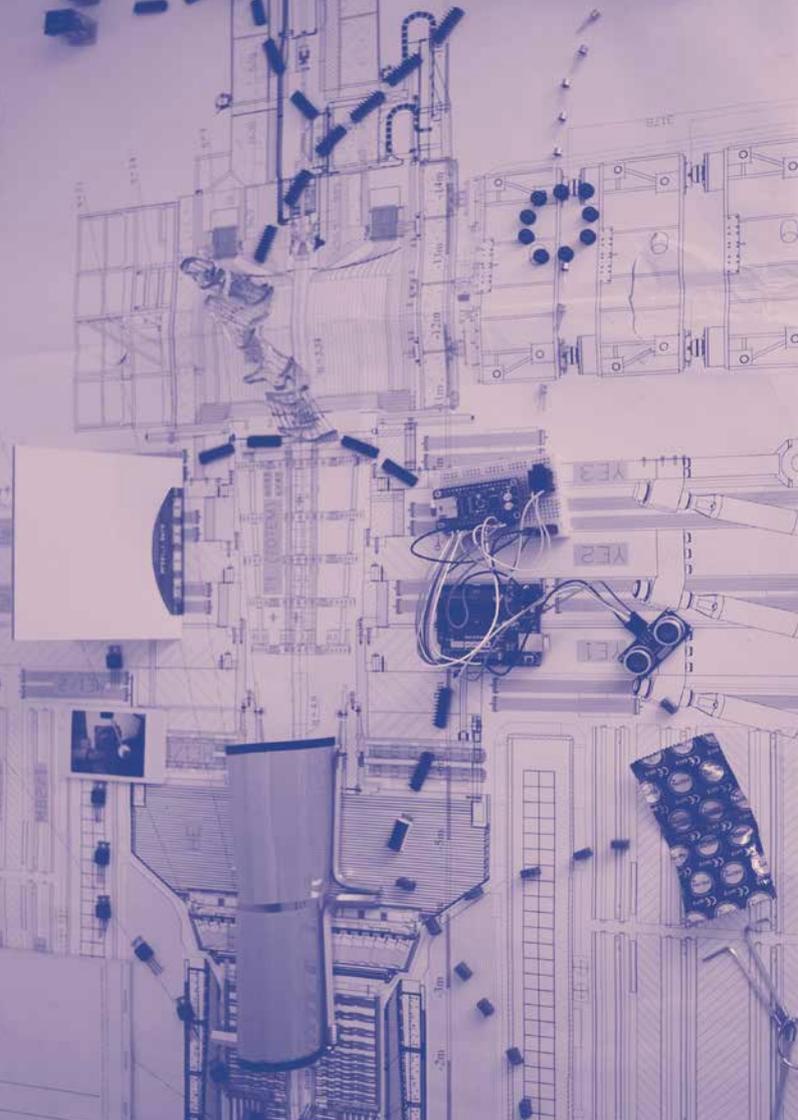
©Andrea Vezga. Image by Brishly Alam.

Untitled

Interactive video installation

Andrea Vezga Acevedo

The importance of gesture in communication processes can often be overlooked. It can fuel and propel thought and speech as well as provide imagery for the dialectic within it. Under this light, by analysing the specific body language of the lecturers at CERN, the aim is to underline the role of gesture as a source of meaning. To provide the audience with a particular perspective into the topics presented through a visual output.



Circuit game

Installation

Natalia Gurova

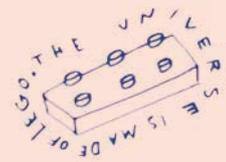
The installation is an effort to handle enormous amount of information about a vague scientific subject; it includes a series of interviews with scientists, as well as a collection of objects originating from CERN. The Totem experiment's Large Hadron Collider circuit becomes a board game. You are a player and allowed to make steps, miss steps, collide, but mostly wait and observe. There is no end or result, or there is one but you are not sure if it was something expected. The key factors are interpretation and an ability to frame things.

Exotic Smoothness between Infinity

Installation

Nora Drumeva

The creation of specific space within the space. The defining of space. Encircling space. Making space explicit. Black hole. Circle. Altered sense of perception. Dematerialization. Darkness. Mirror toward mirror. Reflections. Infinity. Double perspective. Inside outside. Looking in—looking out. Orientation. Rotation. Seeing differently. Reconfiguring space. Connecting space. Two mirrors, different from each other, await presence and interaction. Entering and being confronted with an infinite reflection through space.



PROGRAM

Program

○ **Tuesday 6/6, 21:00**

Untitled. (Until closing) Performance by **Marko Markovic**.

Particle canticle.

Concert by **Daniela Brill** (concept/lyrics) + **Diego Villegas** (singer) + **Alejandro del Valle Lattanzio** (composer).

Pic du Pursuit. (Until closing) One-to-one performance by **Lala Nomada**.

○ **Friday 9/6, 14:00**

Accompanying program

An afternoon of talks and performances reflecting on questions concerning the exhibited projects. Chaired by Brishty Alam and Valerie Deifel.

Session I 14:00–17:00

Chronicae Aetatis Hominum Physicorum

Reading. Introduction of the science-fiction book by **Júlia Mag**.

On the road to supersymmetry

Lecture by **Helmut Eberl** (particle physicist, HEPHY).

Organised by **Andrea Vezga**.

An introduction to supersymmetry topics picked out by Eberl from the exhibited projects.

How real is real –

What ophthalmology tells us
Presentation by **Christoph Mitsch** (ophthalmologist, Medical University Vienna). In relation to 'Reality' by **Denise Schellmann**.

How much of what we see is real and how much is constructed? A talk on the anatomical, biological, neurological and pathological aspects that have significant influence on our visual perception of reality.

Different perspectives on materials

Talks by **Johannes Wittman** (engineer, HEPHY), **Kilian Jörg** (philosopher/artist) and **Clemens Rettenbacher** (TBA21).

A reflection on the research film 'The State of The Observer' by **Johanna Folkmann** and **Rosie Benn**.

A discussion exploring different perspectives on the ethics of technology, materiality and the entanglement of a globalised world system.

Session II 17:30–19:30

Broadening the horizons of 'extra dimensions'

Talks by **Eni Brandner** (animator), **Gregor Schwellenbach** (musician) and **Matthias Fink** (architect).

In relation to 'Umkehren um 180 oder 360 Grad!!' by **Golnaz Bashiri**.

Everyday experiences of 'extra-di-

Schedule

mensions' across different locations.
Thinking about sound-image relations in film through Vlado Kristl

Lecture performance by **Marina Rebhandl** and **Valerie Deifel** (film theorist).

In relation to 'All Beginnings from Before' by Marina Rebhandl.

A collage of theoretical notions on sound-image relations presented alongside a film from Vlado Kristl, a Croatian experimental filmmaker working between the 1950s and 2000s.

Accelerating Silence

Live sound set by **Masha Dabelka** (sound artist) in response to 'Circuit Game' by **Natalia Gurova**.

Musical performance based on processed abstracts of recorded interviews with CERN scientists taken by Natalia Gurova.

Drinks & Performances 19:30

Circuit game-play tour (20-30 min) by **Natalia Gurova**.

Pic du Pursuit (Until closing)

One-to-one performance by **Lala Nomada**.

○ **Wednesday 14/6,
15:00-15:45**

Visiting guests to the exhibition:
Helmut Eberl (Particle Physicist, Supersymmetry, HEPHY, Vienna) and **Andrea Vezga** (Performance Artist, Costa Rica).

Open to all interested in the topic. Held in English.

Please register with andreavezga@gmail.com

○ **Thursday 15/6,
13:00-15:00**

Artists' Tour

Artists talks on exhibited projects.

● ○ **Other events**

Pic du Pursuit. (Until closing) One-to-one performance by **Lala Nomada**.

**Wed 7/6, 17:00; Thu 8/6, 17:00;
Sat 10/6, 12:00; Tue 13/6, 17:00;
Wed 14/6, 17:00, Thu 15/6, 17:00,
Fr 16/6, 17:00, Sat 17/6, 17:00.**

Circuit game-play tour (20-30 min) by **Natalia Gurova**.

Tue 13/6, 17:00; Fr 16/6, 18:00.

CIRCUIT TRAINING - A foray into the world of the Large Hadron Collider

An exhibition of the University of Applied Arts Vienna (Art & Science and Site-specific Art) in collaboration with CERN (art@CMS and HEPHY—Institute of High Energy Physics).

Exhibition 6–17 June 2017

das weisse haus,
Hegelgasse 1,
1010 Vienna

Concept & development:

Brishty Alam, Valerie Deifel, Katrin Hornek, Matilde Igual Capdevila, Bernd Kräftner, Paul Petritsch, Karl Salzmann, Virgil Widrich.

Works by:

Francesca Aldegani, Golnaz Bashiri, Rosie Benn, Daniela Brill, Andreas Budak, Nora Drumeva, Cansu Ergün, Johanna Folkmann, Athanasios Gramosis, Lukas Gritzner, Natalia Gurova, Rafael Lippuner, Júlia Mag, Marko Markovic, Benedikt Meixl, Frederique Neuts Leroy, Lala Nomada, Marina Rebhandl, Carmiña Tarilonte Rodríguez, Denise Schellmann, Andrea Vezga.

At the department of Site-specific Art, the projects were developed within the seminar “Unplugged Images: An Observation on CERN,” initiated and led by Katrin Hornek. The seminar was accompanied by a series of talks by Johann Lurf, Andreas Spiegl, Anna Witt, Margit Busch, and Seth Weiner.

The departure point for the CERN/HEPHY project in the Art & Science department was a question of whether an experimental socio-technical machine as huge and complex as the LHC particle collider in CERN, with its respective detectors, and the woods in a remote area of our planet have something in common? Does a ‘life in the woods’ (Thoreau, 1854) and the detection of ‘Beauty Quarks’ (Hephy ÖAW, 2014) show any connection? The project was developed in the ‘Nature as Nature’ axis of the ‘Multinaturalism’ annual topic. This was led by Virgil Widrich in the ‘Roundtable’, by Bernd Kräftner in ‘Experimental Studies’, by Karl Salzmann in ‘detect-record-display’ and by Brishty Alam and Valerie Deifel in ‘Artscience Practises’. The project was further supported by our co-operation partners Franz Kainberger, Andrea Maier and Chris Walzer.

In cooperation with:

Brigitte De Monte, Marko Dragicevic, Helmut Eberl, Michael Hoch, Josef Pradler, Jochen Schieck, Christoph Schwanda, Wolfgang Waltenberger.

Thanks to:

Hans Peter Beck, Margit Busch, Brigitte De Monte, Daniel Denegri, Marko Dragicevic, Helmut Eberl, John Ellis, Chris Fabjan, Teresa Fonseca Martín, Alexandra Gausam, Michael Hoch, Johann Lurf, Giora Mikenberg, Sonja Orman, Josef Pradler, Jochen Schieck, Christoph Schwanda, Andreas Spiegl, Maria Stepanek, Mick Storr, Christopher David Thomas, Wolfgang Waltenberger, Seth Weiner, Team Weisses Haus and Anna Witt.

Graphic design:

Matilde Igual Capdevila.

Public Relations:

Anja Seipenbusch—University of Applied Arts Vienna,
Brigitte De Monte—HEPHY.

Print:

REMAprint Litteradruk, 1160 Vienna

Copyediting:

Sam Frank, Georgia Holz,
Alexander Jackson Wyatt.

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1030 Wien
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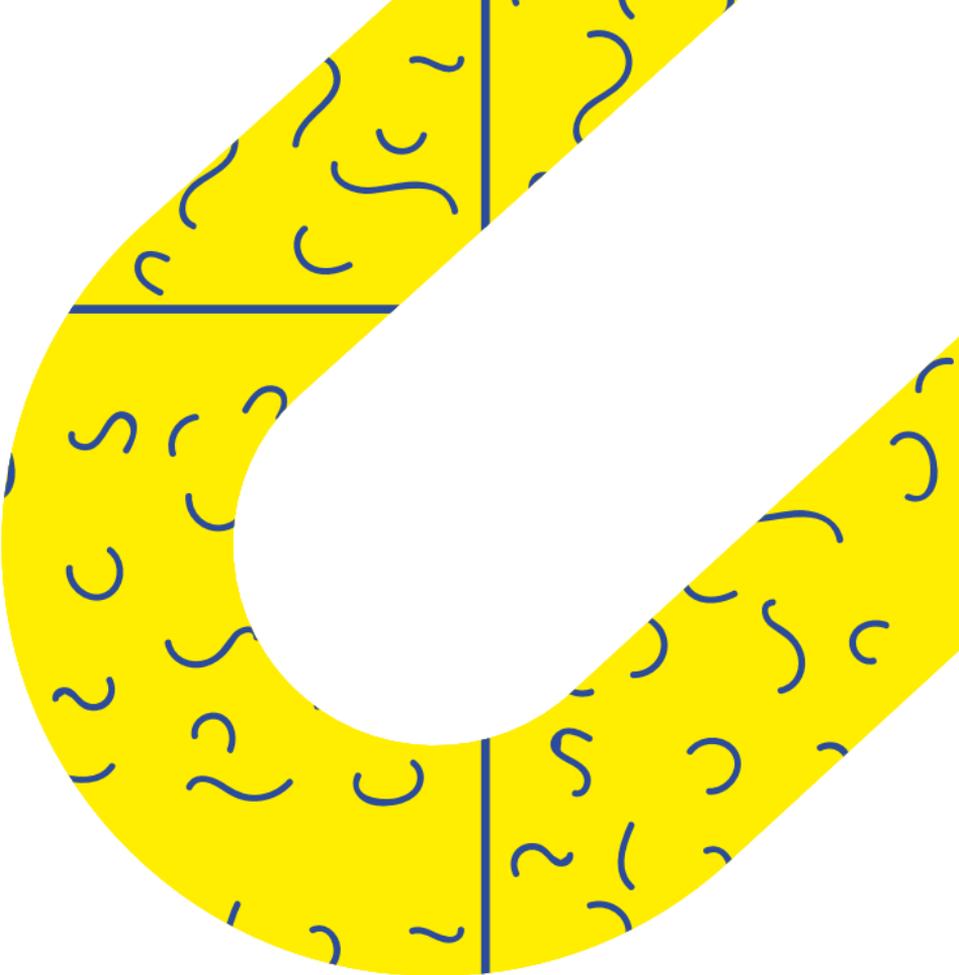
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