



ORIGIN project in Bosnia and Herzegovina in 2020

as a part of South East Europe initiative cross-disciplinary
science education engagement & networking

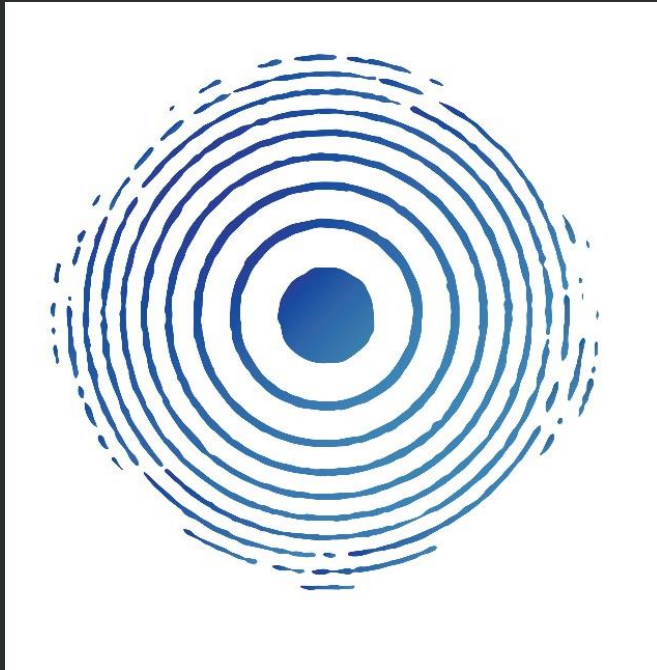
Presentation at "Bosnian Teacher Programme"

CERN, 5 February 2020

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Since 2017



ORIGIN

Supported by

ATLAS, ALICE, CMS, LHCb,

LIGO, VIRGI, ICEcube, DUNE

Muography, Perimeter Institute,

Canadian Light Source, and other
international partners

Particle Physics

Astrophysics

Gravitational Waves

Neutrino-Physics

Muography

Accelerator

Technologies

Since 2012

Methology developed & disseminated since 2012

By CMS collaboration via art@CMS

Global cross-disciplinary science engagement & networking program



ORIGIN program **Mission**



Objectives:

cross-disciplinary science **engagement** & **networking** with special emphasis on education

THINK globally ACT locally –

- support our science community where they need support -> at their HOME country

“Arts as a tool to engage actively and empower them to own the topic and allow them to contribute”

(NOT for the sake of the ARTs => art@CERN program)



ORIGIN: *What We Do*

Exhibitions

The outcome of a dialogue and collaboration between artists, art institutes or communities with our science community. An exhibition or performance will act as catalysts for promoting public interest and understanding of science concepts as well as artistic expressions.

all creative expressions are invited, photo, painting sculpture, music, dance, lyrics, performance ...

science & art workshops – for graduate and undergraduate students

Interdisciplinary in their nature, SciArt workshops enable young people to gain a better understanding of science in general. Participants get inspired and encouraged to foster their own creativity, linked to scientific methodology. Critical thinking is key to cope with the challenges of the 21st century.

science learning (masterclass) followed by philosophic discussion and creative art production

The **exhibition** serves always as **framework to support** activities like : presentations, round table discussions, science and creative workshops, meet real artist or scientists,

our Scientist and our collaborating professional artists act as authentic **role models for students**

“South East European cross disciplinary science education, engagement and networking Initiative”

- Time scale to initiate 3-4 years: 2018 – 2022 (once program disseminated -> self-sustained by local community)
- Midterm or long-term aim: Create sustainable network who may run interdisciplinary activities on science with art.

http://mhoch.web.cern.ch/mhoch/Art@CMS/Science4Peace_interdisciplinaryScienceEducationEngagementNetworkingTour_art@CMS.pdf

Kick off or example event already 2018:

Split/ Croatia (17th – 23th September)
Cetinje/ Montenegro (October 9th – 11th)
Tirana/ Albania (October 10th -12th)
Sarajevo/ Bosnia (October 15th – 19th)
Imotski/ Croatia (October 27th)

Possible scenario and cities 2020, 2021 and 2022:

Ljubljana (*Slovenia*), Zagreb [Osijek#, Rijeka#] (*Croatia*),
Belgrade [Novi Sad#, Niš#] (*Serbia*), Sarajevo [Banja
Luka#, Mostar#] (*Bosnia and Herzegovina*), Podgorica
(*Montenegro*), Tirana (*Albania*), Pristina (Kosovo *),
Skopje (*FTR Macedonia*)

This project will mutually Create dialogue, cross boarder networking and exchange, as well as engagement on common topics based on scientific methodology and culture. The nature of this program supports to work with mixed teams of different regions for mutual presentations and common engagement.

Cultural Collisions – Split /Croatia by ORIGIN

Old City Hall – Sept. 17th -22nd 2018

Exhibition, lectures, round table discussion, workshops;

Workshops: Physics and Music (Arduino Explora), Gravitational waves (Torino interferometer), Playing with data (CMS tool developed for Canada)

Next years event :



Izložba

POSTANAK I EVOLUCIJA SVEMIRA KROZ UMJETNOST I ZNANOST

Stara gradska vijećnica, Narodni trg, Split
17. do 21. rujna 2018.
u vremenu od 10h - 20h

Ulaz slobodan

PROGRAM

Ponedjeljak, 17. rujna 2018.
19h Otvaranje izložbe

Utorak, 18. rujna 2018.
18h30 Javno predavanje
Michael Hoch, CERN - Geneva: "Art and Science"

Četvrtak, 20. rujna 2018.
18h30 Javno predavanje
Martin Hendry, University of Glasgow:
"Listening to Einstein's Universe: the Discovery of Gravitational Waves"
20h Okrugli stol
"Razumijevanje svijeta kroz umjetnost i znanost"
Sudjeluju: James Beacham, Branko Franceschi, Nikola Godinović,
Michael Hoch, Chiara Mariotti

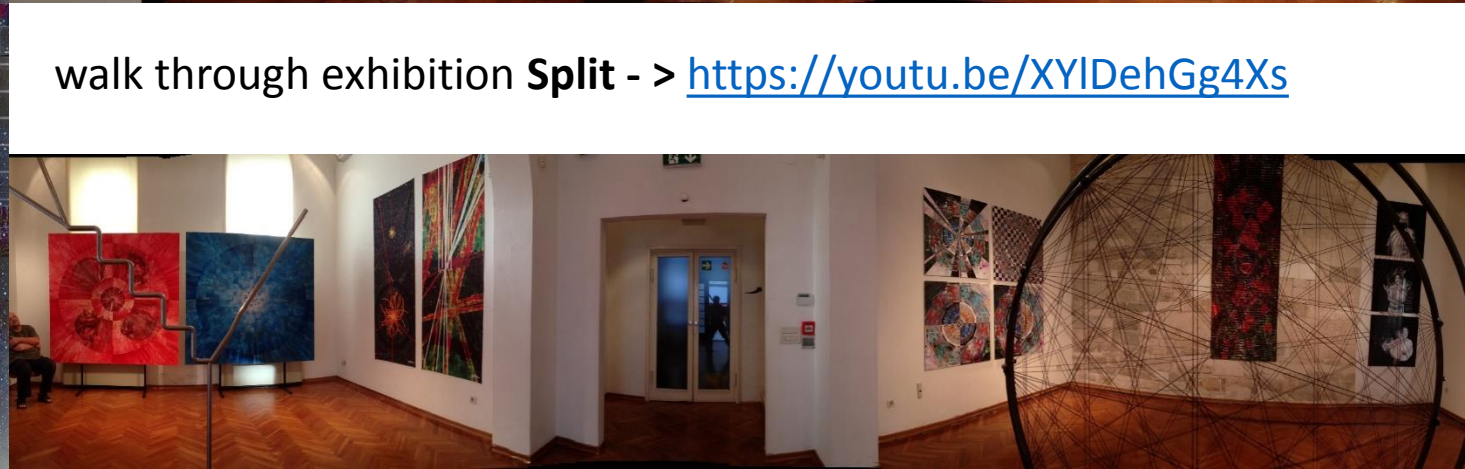
Petak, 21. rujna 2018.
18h30 Javno predavanje
James Beacham, Ohio State University:
"A Big Bang Machine on the Moon"

* Javna predavanja i okrugli stol će se održati u palači Mileti, u okviru konferencije "LHC Days in Split", ulaz slobodan

*** Možete su grupne posjete izložbi za učenike svih uzrasta. Za dogovor se javite emailom na Nikola.Godinovic@jesb.hr ili Ivica.Pujjak@jesb.hr



walk through exhibition **Split** - > <https://youtu.be/XYIDehGg4Xs>



Cultural Collisions – Split /Croatia by ORIGIN train the trainers

During the main exhibition we trained students from primary and secondary schools to act as lectures for following (see next slides).

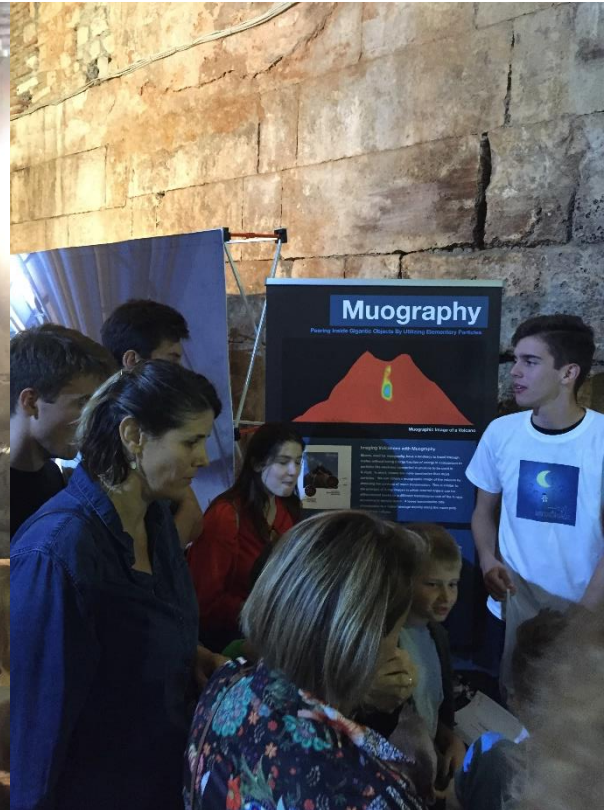


Cultural Collisions – Split /Croatia by ORIGIN

Researchers night – September 28th

Format: students we trained become lecturer to general public and training other students.

Audience during the researchers night: few thousands citizens



Cultural Collisions – Split /Croatia

Visiting primary school – October 2nd

Format: exhibition & lectures, one day

Audience: about 100 primary school students



Cultural Collisions – Split /Croatia by ORIGIN

Four secondary schools – October 3rd

Format: exhibition and lectures, one day

Exhibition presented by **trained students**

Lectures given by **CMS scientists**

Audience: about 500 secondary school students



Cultural Collisions – Split /Croatia by ORIGIN

Primary school visit – October 29th

Format: lectures with trained student, training & participation



art@CMS – Art University Collaboration

Gallery National Museum, Cetinje/ Montenegro October 2018

Format: art exhibition lectures and Cultural Collisions workshop start 3 schools 85 students

Event is the final show of our 2 semester course “art@CMS – Art University Collaboration, 2017/ 2018”

Presentation: Final presentation of 5 university art students + art@CMS collaborative artists

Video walk through the exhibition : <https://youtu.be/UUnBDYhiSlk>



LHC workshop & cross disciplinary exhibition

Akademia Shkencave Tirana / Albania October 2018

Format: 2 day science workshop enhances by “light art exhibition”, aim: inspire students and general public and build up interest in our science community

Audience: 3 guided tours with High School students + general public conference



Science & Art, Sarajevo /Bosnia by ORIGIN

Fine Art Academy, 15th -22nd October 2018

Format: cross disciplinary exhibition ORIGIN, public lectures in the exhibition

Audience: general public and about high school **students 400 attending lectures**

Further remark: Art university Sarajevo requests of art university collaboration



Cultural Collisions, Imotski / Croatia by ORIGIN

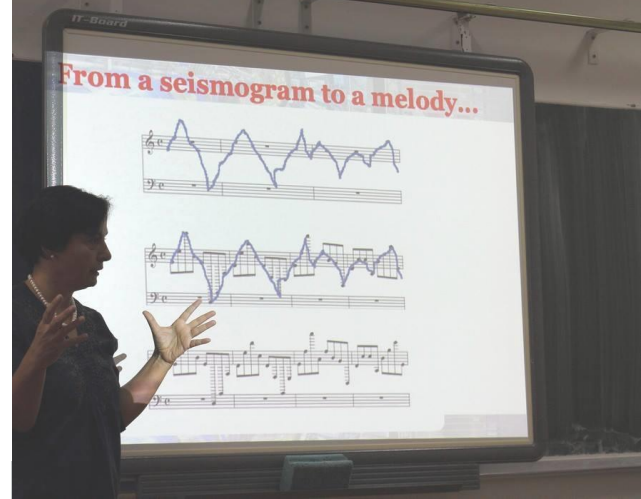
Exhibition and Concert, October 27th 2018

Format: Exhibition, masterclass, lectures, concert with French and local orchestra

-2 workshops in parallel with 2 teams:

Physics & Music, Gravitational Waves, Playing with data

Audience: 400 students of 4 school attending lectures and 70 students workshops participants



Cultural Collisions, Imotski / Croatia by ORIGIN City Hall, October 27th 2018



Format: ORIGIN exhibition, masterclass, lectures, music concert

Concert of the French youth orchestra and the local orchestra playing together.

general public audience in exhibition and concert: ~ 500

Video of the joint concert performance “Beethoven Ode to Joy”

<https://youtu.be/H6y8ziRyEaw>



Plans for B&H in 2020

- **ORIGIN in Sarajevo: October 5 – 9**
 - In parallel with the "Sarajevo School of High Energy Physics"
 - With the help of Austrian Cultural Forum and Wiena School of Art
- **ORIGIN in Banja Luka: October 12 – 16**
 - With one day workshop on high energy physics & CERN
- **ORIGIN in Mostar: October 19 – 23**
 - With one day workshop on high energy physics & CERN
- **We are looking for partners to co-organise these events**
 - As our goal is to involve local community so that they continue with activities in the future
 - Contact us if you are interested

Fundraising : “South East European cross disciplinary science education, engagement and networking Initiative”

Organizations who raised interest and possible funding or collaboration opportunities:

UNESCO

Austrian Cultural Forum Sarajevo

Western Balkan Funds

Regional UN department Montenegro

JRC-ISPRA

COST European Cooperation of Science & Technology

RYCO (Regional Youth Cooperation Office)

RCC – Regional Cooperation Council

Council of Europe

OSZE

Our local partners in the region:

Ministry of Science Montenegro

Embassy France Sarajevo

Embassy Austria Sarajevo



Thank you for your attention
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