

ATLAS and the Arts

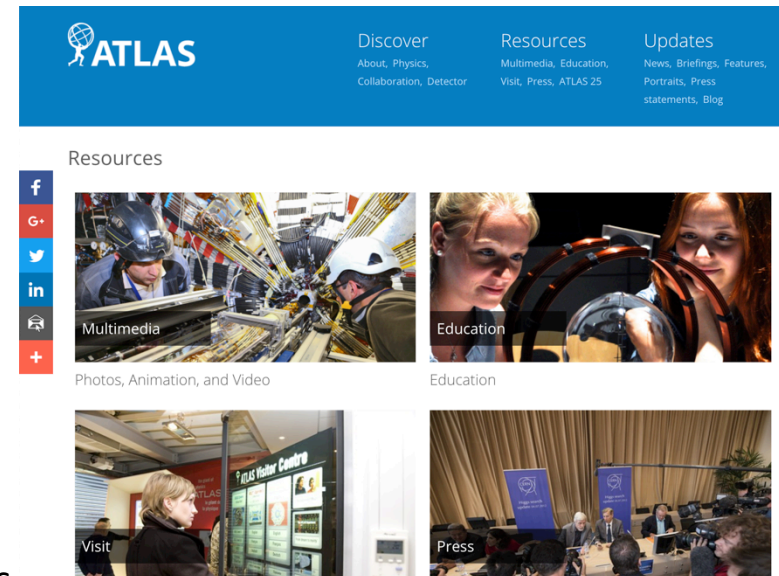


From Art-Science partnerships to ORIGIN

ATLAS key values & context

A strong and well supported outreach group,
lead by young (elected) coordinators,
with 5 missions:

- 1 Communication:** web site, social media, brochures.
“Explain our science”
- 2 Education:** Open data, Master-Classes, tools, books.
“Foster link with educators / IPPOG”
- 3 Partnership with CERN teams:** for all on site activities.
“Satisfy our traditional & interested public”
- 4 Promote outreach in HEP** through conferences sessions, talks, publications, side events demos.
- 5 “Reach out” by supporting any “ATLAS-wide” good idea:** go to people who do not know that we exist, talk to those who think differently → science huts in music festival; citizen science projects & debates; diversity; VR & “new media” partners; art-science ventures... **ORIGIN !**

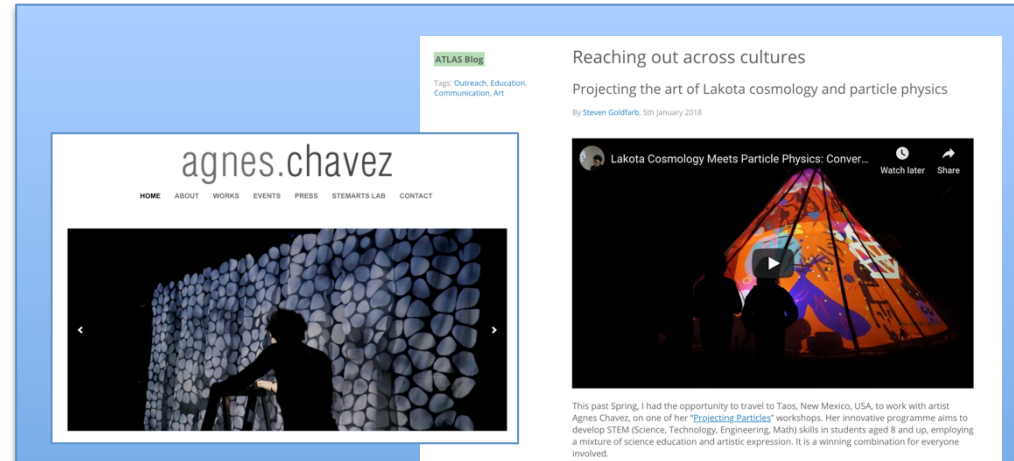


Use case 1: individual links & projects

In a world wide collaboration each institute, country, scientist has a voice. When it comes to outreach, people do best what they like... in their way 😊 The support requested and provided can range between:



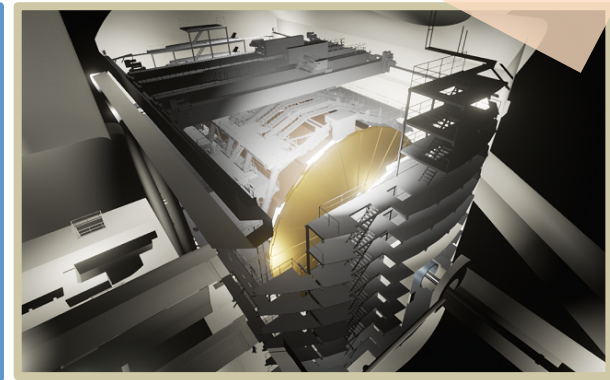
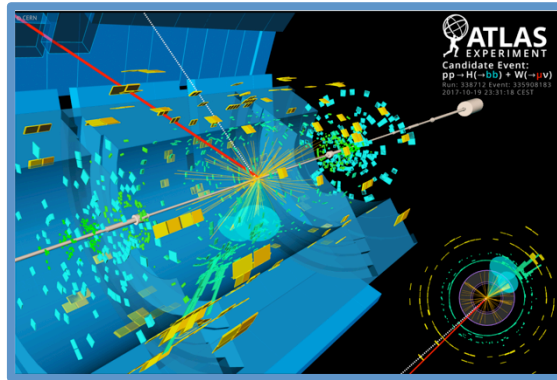
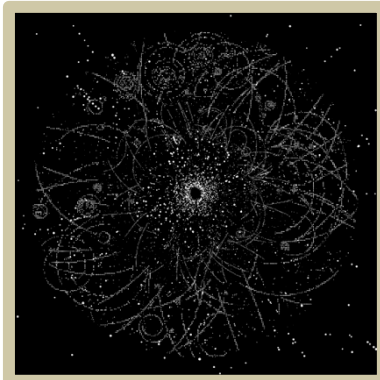
None. James acts here as a free ATLAS scientist, not on behalf of ATLAS.



Years long “brotherhood”

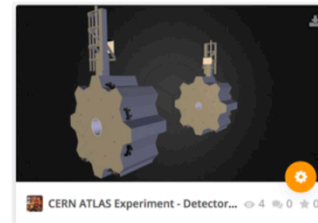
- Few days “research stay” for chats and tours
- ATLAS blog(s) on few common projects
- Trigger local HEP contacts for the artist
- Conference abstracts for the HEP community

Note: in the digital age, DATA capture the designers, public and artists imagination as much as concepts and objects. Software tools evolve behind the scenes.



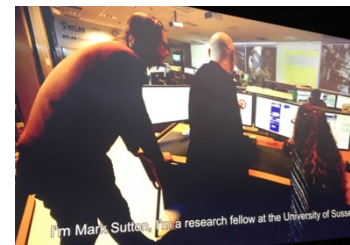
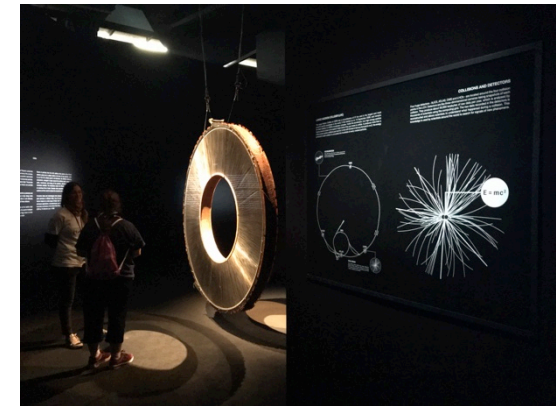
Releasing ATLAS 3D data ?

- Recently, the ATLAS Outreach coordinators received a request from **The New York Times**: they want to produce a piece of **Virtual Reality** to explain the Higgs Boson, to be shown in their VR channel, **recreating in 3D** one of the **Higgs event displays**: <https://cds.cern.ch/record/2254888>
- For that, the **geometry** and the **physics objects** needed to be exported into a **standard, suitable 3D data format**
- Ric quickly created a Sketchfab repository to **convert** and **share our 3D data** with the NYT team: <https://sketchfab.com/rmbianchi>



Slide from October 2018
ATLAS sw & computing
meeting

Use case 2: support behind the scenes




ATLAS Blog

Tags: Art, Outreach

The art of physics

By Antonella De Santo, 4th October 2017



Visions of the Large Hadron Collider
Antonella De Santo, Beatrice Fast, Semionodor

"Visions of the Hadron Collider," presented at the British Science Festival by the author, [De Santo], [Fast], [Semionodor], and [Gerhardt]. (Image: A. de Santo/ATLAS)

5



QUANTIZER high energy physics experienced through real-time a

Use case 3: branded partnerships, a team work

(note: Each collision corresponds to ~30 seconds of real-time audio. If the experiment is off, audio is generated from recent data)

ATLAS Experiment

Sonification Methodology

Prerecorded audio sample files

Contact

Methodology

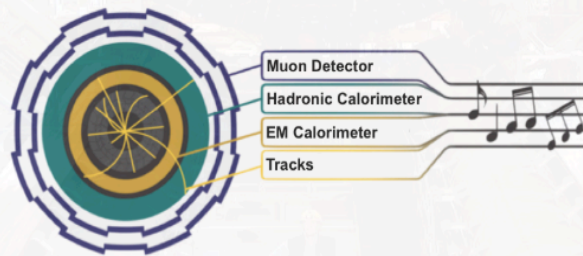
Overview

Practical Applications of Sonification

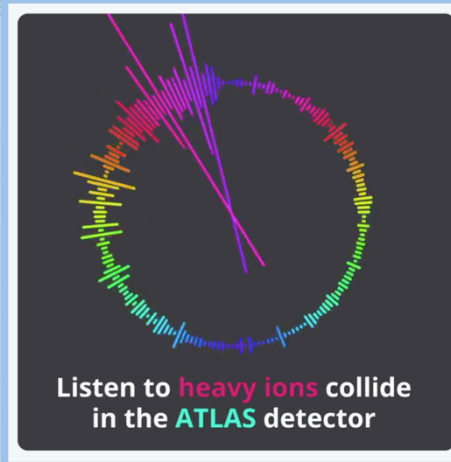
DJ'ing With Quantizer

'He's a Pirate' Stream Description

Archived Realtime Stream Descrip



For a detailed summary of the project, consult the project's [NIME conference paper](#), [ICHEP outreach paper](#) and [CHI extended abstract](#).



the **PHYSICS** of **MUSIC** AND the **MUSIC** of **PHYSICS** MONTREUX PETIT PALAIS 9 JULY - 15:00

The Program

- Introduction - Welcome to LHC 2.0
- Part I - The Physics of Acoustics: sound, space, and extra dimensions
- Part II - The (Live) Music of the LHC: when two protons collide
- Finale - An Improbable Duet: between piano and proton

The Participants

- Robert Klaffer, CERN Beam Instrumentation Group
- Gabriel Parafizian, Laboratoire de Mécanique et d'Acoustique, CNRS, Marseille
- Juliana Cherston, Massachusetts Institute of Technology Media Lab
- Ewan Hill, University of Victoria, TRIUMF, ATLAS Experiment at CERN
- Domenico Vicinanza, Argus Ruskin University GEANT Association
- Al Diatler, Pianist, www.aldiatler.com
- Steven Goldfarb, Dept. University of Michigan, ATLAS Experiment at CERN

The Montreux Jazz Festival

- Workshop programme
- Full programme

Download poster in [pdf] or [png]



ATLAS data sonification : a new interface for musical expression and public interaction

Ewan Hill¹, Juliana Cherston², Steven Goldfarb³, Joseph A. Paradiso²

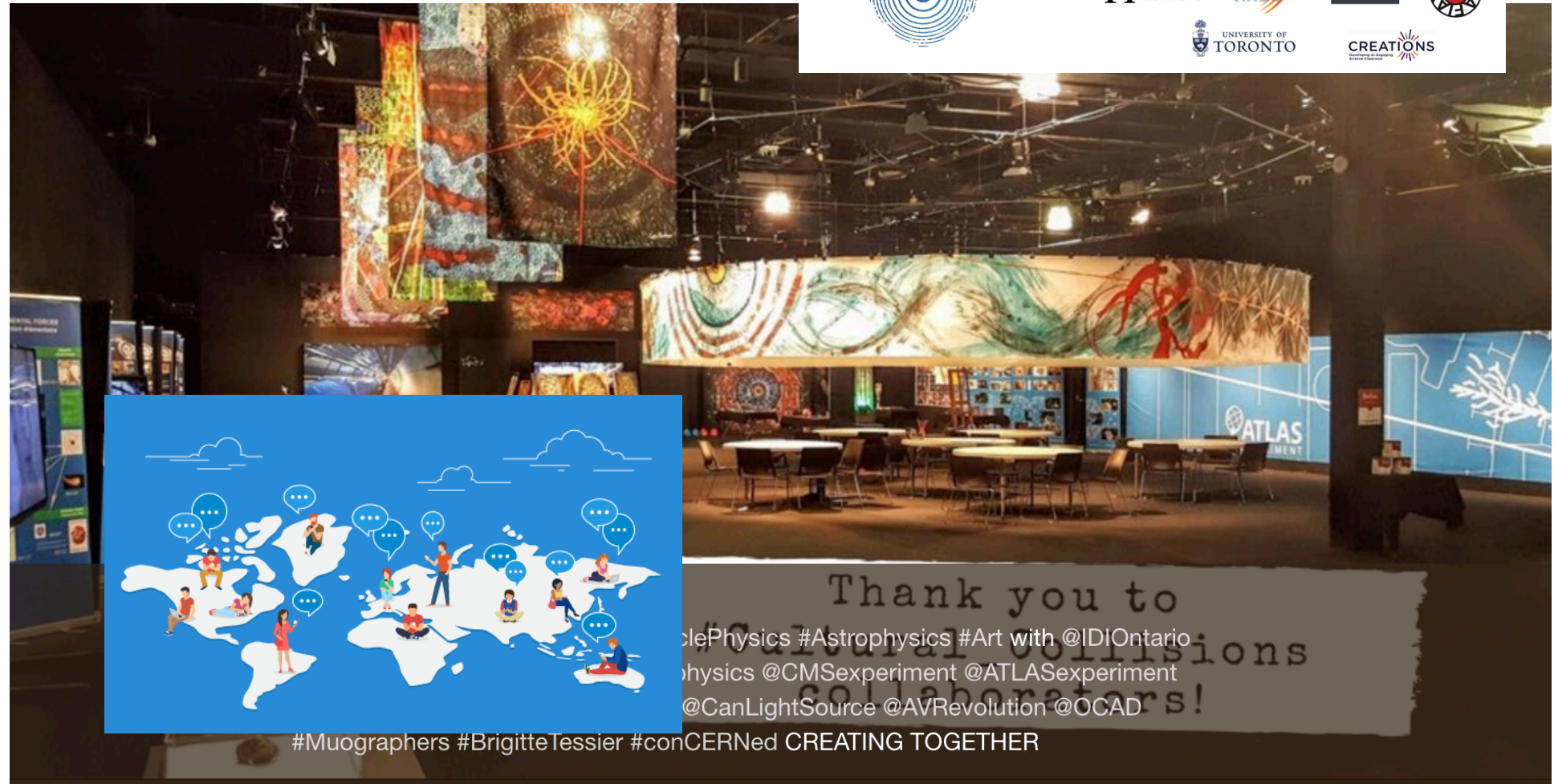
¹Dept. of Physics and Astronomy, University of Victoria; TRIUMF ²Responsive Environments Group, MIT Media Lab ³Dept. Of Physics, University of Melbourne



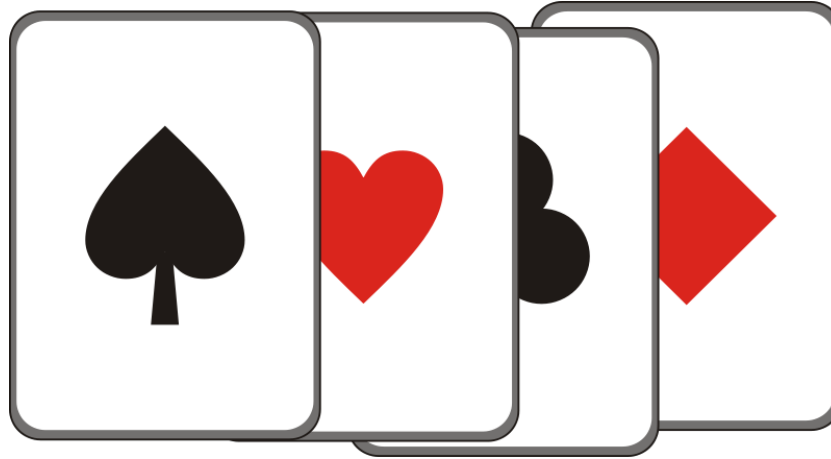
Use case 4 : handling national projects actors & logos



Invited by the Ontario Ministry of Education
and supported by ORIGIN - collaboration



We have the tools, why do we need more ?



TO RAMP UP

Spread the know how, inspire and trigger projects in wider ATLAS circles = in our world wide collaboration

TO BE FAIR

Artists who work with us may need/use a visible sign/credit. Scientists invest time in projects with artists as well.

This is a bottom-up process, surprises and mistakes are inevitable

Limitations will stay: we can find time but no money, there is no exhibit space @P1 (CERN)

ATLAS and the Arts

Protect, grow & highlight what works

- The notion of “team” has proven to be fair and sustainable for all (scientists, artists, management)
- “Free electrons” will stay free 😊
- The current transparent synergy with CERN based programs is a win-win situation

Build links, contacts & motivation within our community

- “Kick off” mechanism for publicity & emulation, using existing ATLAS mechanisms (e.g. awards)
 - Any new structure has to be approved by the Collaboration. It takes ~ 6 months.

Conclusion : long life to ORIGIN !

“The new born ORIGIN network is in itself an experiment, where new co-creation processes should be tried, benefits and drawbacks evaluated to move towards a sustainable, transparent and fertile new type of balance”

*Many many thanks for our hosts for this workshop,
which theme, participants & timing could not be more appropriate
to inspire the “ATLAS and the Arts” next steps.*

