



International Particle
Physics Outreach Group

The IPPOG Tapas Project

How far can
Spanish inspiration + Master student + IPPOG members resources
Get us ?



A place for “Stuff” on ippog.org ?



The image shows a composite of two website screenshots. The top screenshot displays the navigation menu with 'Resources' highlighted by a blue arrow pointing to a dropdown menu containing: 'Members & partners websites', 'Particle Physics Tapas', 'RDB, the resource database', and 'Publications'. A blue curved arrow points from this dropdown to the 'Particle Physics Tapas' section in the bottom screenshot. The bottom screenshot shows the 'Particle Physics Tapas' section with a red background and white text, and a green box containing 'Success Stories' and 'Resources' lists.

Navigation Menu: About Resources Activities News Calendar

Resources Dropdown:

- Members & partners websites
- Particle Physics Tapas
- RDB, the resource database
- Publications

Activities Section:

- International Masterclasses
- Global Cosmics

Collaboration Section:

Success Stories

- > Discover IPPOG reports and publications
- > ICHEP 2024 Conference Outreach Plenary talk is
- > Enjoy the 2024 photo contest results
- > 8 witness stories on applications for society !

Resources

- > Particle Physics Tapas, by IPPOG working groups
- > IPPOG members & partners multilingual web sites
- > RDB, the 25th anniversary IPPOG resource database

View some of the IPPOG members projects

Particle Physics Tapas Section:

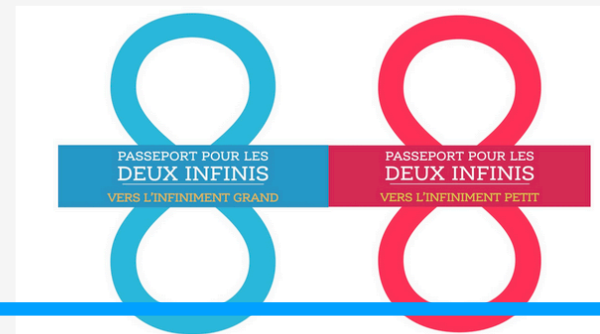
Any thirst or hunger for particle physics? Here are a few stories prepared by members of the IPPOG community and working groups



Request 1: Working Groups Stories

Particle Physics Tapas

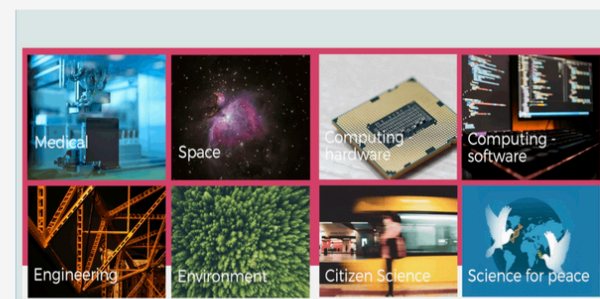
Any thirst or hunger for particle physics? Here are a few stories prepared by members of the IPPOG community and working groups



23 July, 2024

Passport to the Infinite

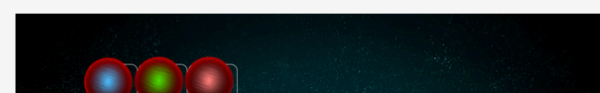
A general introduction to the infinitely small, the infinitely large, and the links between the two. In this way, the reader will meet cosmic messengers and the instruments that particle physicists use to operate to understand the intimate structure of matter and the universe.



08 July, 2024

Benefits of fundamental research for society

Concrete examples of successful applications for the benefit of society from (particle) physics and related sciences. Compiled and presented by the IPPOG working group on "outreach of application for society"



08 July, 2024

Positron Emission Tomography: can crystals used in particle detectors save lives?

The Positron Emission Tomography (PET) is explained as a medical imaging technique widely used in hospitals to detect anomalies in the body of patients (like cancer tumors) on a daily basis. The article explains how PET works and how knowledge of basic physics processes is used to visualize the physiological processes in biological systems.

Different elements routinely used by experimental physicist are involved including detectors, electronics and image reconstruction technologies. The history of the PET evolution, including some personal stories, is available as Addendum

[Link to the story](#)

Authors: Beatrice Bressan, Yiota Foka, Barbora Bruant Gulejova, Despina Hatziphotiadou

IPPOG witness stories

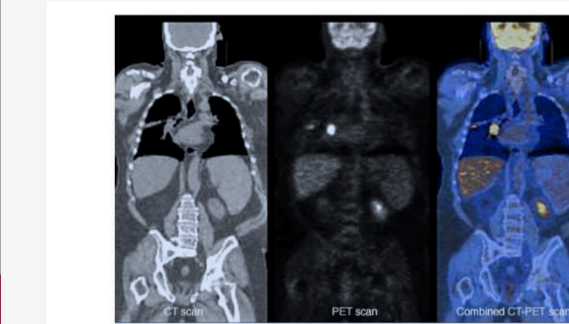
Concrete examples of successful applications for the benefit of society from (particle) physics and related sciences
Compiled and presented by the IPPOG Working Group on Outreach of Applications for Society: [link](#)



01 July, 2024

Accelerators to reduce pollution of maritime traffic

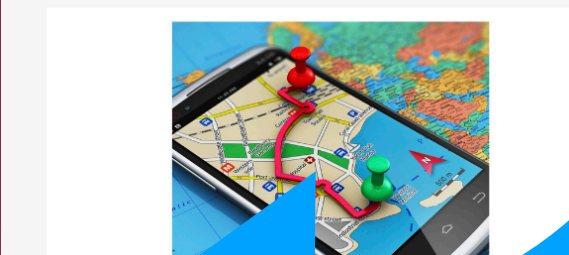
The accelerator community has a lot of examples of applications of accelerators used for the benefit of the society. One of the most unexpected applications is the pioneering use of compact modular linear accelerators for treating the exhaust gas of diesel engines of ships.



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Activity in Action – the GPS Navigation System knows it

A real-life application of Einstein's theory of relativity, used by almost everybody every day, is the GPS navigation system. How this works are given in this short story.

Behind the Scenes: CDS new type of Documents

Request 2: translation of existing texts

Original requests in 2023, from:

- Germany: stepped down, because the tapas format was not adapted.
- France: managed to get the “passport to the infinities” book rights. Let us complete freedom.

==> Found, among CERN Admin Students candidates, a translator interested in scientific texts AND what we do (!!!)

- Internship was shortened because her previous employer wanted to keep her... and her next employer wanted to get her asap !
- She will contribute to future discussions, in particular to explain the process.

Particle Physics Tapas

Any thirst or hunger for particle physics? Here are a few stories prepared by members of the IPPOG community and working groups



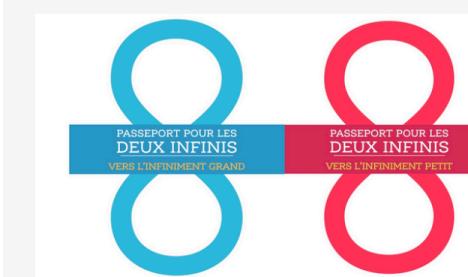
23 July, 2024

Passport to the Infinite

A general introduction to the infinitely small, the infinitely large, and the links between the two. On the way, the reader will meet cosmic messengers and the instruments that particle physicists build and operate to understand the intimate structure of matter and the universe.

4 main sections to update & check

Credits & adds-on



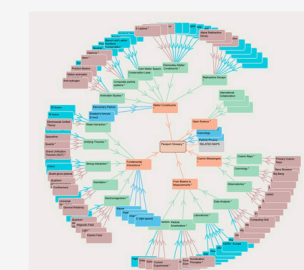
01 July, 2024

Passport to the Infinite: the Journey goes on

The story does not stop here... Neither for the scientists nor for you, interested reader.

In this section the story and the authors of the original book are presented, as well as other publications from CNRS/IN2P3, one of the pillars of the IPPOG collaboration in France.

A glossary provides tips for further exploration, and links are provided to follow the journey.



The Infinite Glossary

Now that you have a passport, need directions? Initially fully integrated in the book, the glossary has also been revisited and is available:

As a classical alphabetical list

Organised into 5 themes: fundamental interactions, matter constituents, from beams to measurements, cosmic messengers and open science.

Readers interested by the links between all items may prefer: an interactive graph

What does a glossary mean online ?

Many questions / thoughts

Updates ? Need a reference point

- Used ICHEP 2024 for the “infinitely small”
- Can we use ICRC 2025 for the “infinitely large” ? [will need help]

Proof reading of the translated version ?

- According to the rules, should be a native speaking scientist... Who will not try to re-write the book :-)
- If we go in that direction, what about automatic translation + checks ?

How Big is a Particle ?
 The Fundamental Forces
 A well-known formula: $E=mc^2$
 From Atom to Nucleus
 Nuclei, protons and neutrons
 Quarks
 The Photon
 Unravelling the Secrets of the Neutrinos
 Antimatter
 The Standard Model
 The Higgs Boson
 Beyond the Standard Model
 The Unification of Forces
 Quantum Gravity

From Detection to Measurement
 Particle Accelerators
 Behind the Scenes of an Experiment
 The LHC
 Particle Hunters
 Recreating the Universe Primordial Soup
 The Sister Experiments
 Understanding Antimatter
 Future Colliders
 The Largest Computer in the World

Astronomy
 Surveying the Universe
 Electromagnetic Waves
 The Forces in the Universe
 Planets
 Stars
 Supernovae
 The Origin of Atoms in the Universe
 Black Holes
 The Outskirts of Black Holes
 Galaxies
 Galaxy Clusters
 The Dark Ages of the Universe
 The Cosmic Microwave Background
 Primordial Nucleosynthesis
 Antimatter in the Universe
 Dark Matter
 Dark Energy
 The Early Universe

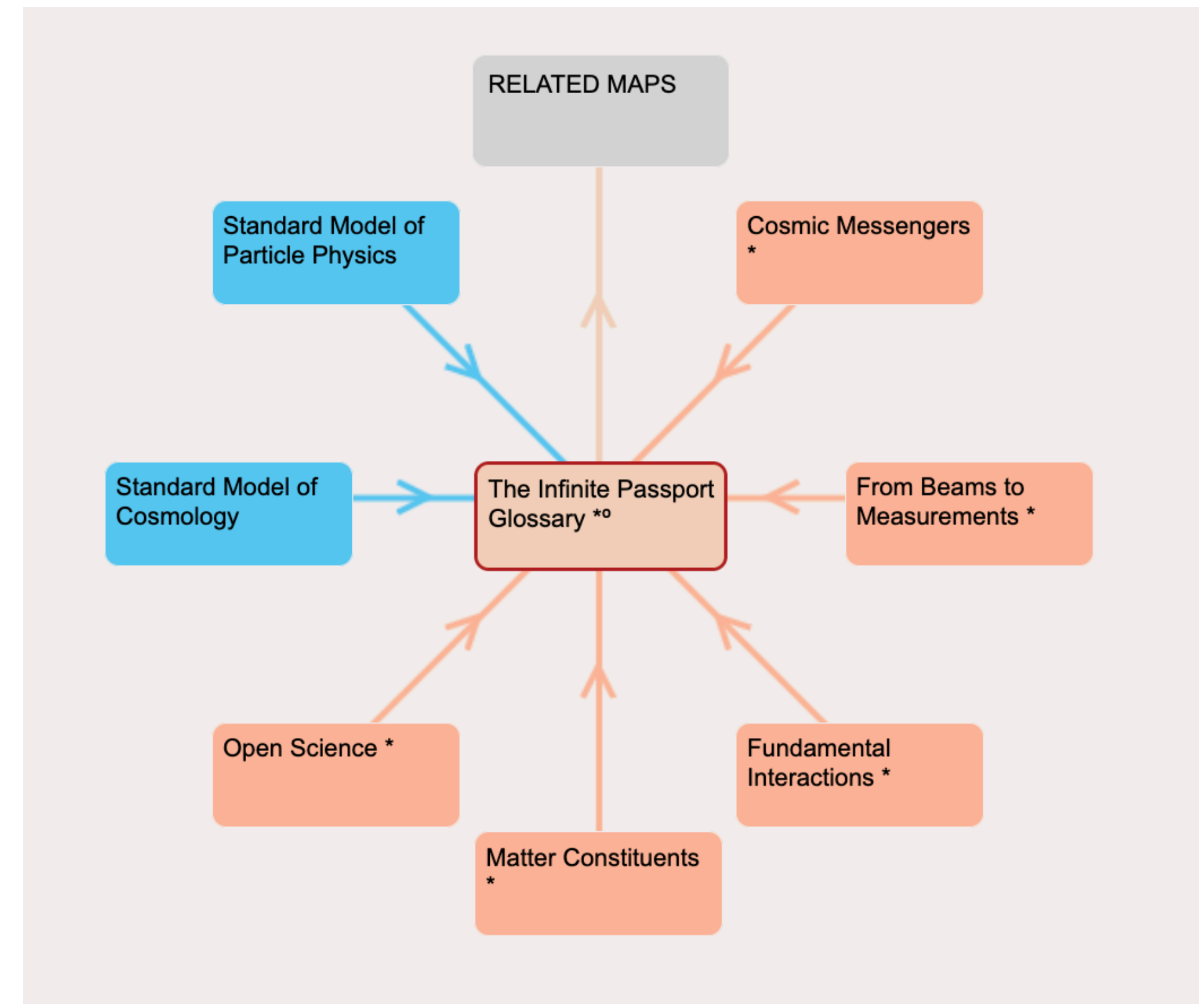
Cosmic Rays
 The Pierre Auger Observatory
 Other Messengers

Even more questions / thoughts

Books are great, but once online ... How do we compete with search engines, wikipedia, YouTube and chatGPT ???

- Structured information, of homogeneous style, target audience and level
- Tags, if not content will not be found
- Glossaries & maps ? Very active field, pioneered by Anja Horvat in her PhD

“ Science is in English, but outreach is in your native language” ...



<https://debategraph.org/Stream.aspx?nid=722485&vt=rgraph&dc=focus>

Wrap up

IPPOG cannot afford larger scale translation projects. However, thanks to the quality of the materiel provided by Yiota and Nicolas this full scale exercise was extremely useful.

The new “Tapas” format is validated and available for all,
We have nice and up-to-date content on ippog.org

The next admin student will focus on the 3rd request for support received:

- 2023: IMC integration in ippog.org
- 2024: Tapas project
- 2025: Global Comics & Resources on a “wordpress toy” provided by CERN

Next Steps towards a better share of our multilingual collaboration & resources

It should be easy, with the upcoming CERN website migration to Wordpress, to create a set of language specific pages:

The first could be Spanish

It has to be ... simple, inclusive, curated by a few interested people

It has to highlight ... explicit credits to the resource original developer, very clear tags

Cosmic rays & multi-messengers will be more than welcome, to keep up with the link between the “two infinities”

