



I.FAST 1st Annual Meeting

4th May 2022

Nicolas DELERUE / CNRS

with Phil Burrows/Oxford, Bob Holland/ESI, Elias Metral/CERN, Louis Rinolfi/ESI, Maurizio Vretenar/CERN

i.FAST Challenge based innovation?



- During 9 days teams of students will try to suggest innovative solutions based on accelerators technologies to address a challenge.
- On the 10th day they will present their work to a jury at CERN.

Topic 2022

- We decided to have topic in line with the Horizon Europe missions:
 - Cancer
 - Adaptation to climate change including societal transformation
 - Healthy oceans, seas coastal and inland waters
 - Climate-neutral and smart cities
 - Soil health and food
 - More details on these missions can be found at https://ec.europa.eu/info/horizon-europe/missions-horizon-europe_en
- A program committee drawn from experts from I.FAST and beyond was asked to give advice on which topic would be the most suited.
- The selected topic for 2022 is “**Accelerators for the environment**” (which covers both the maritime environment and the terrestrial environment).

Members of the program Committee:

Giovanni Anelli (CERN), Sam Bayat (CHU Grenoble), Christine Darve (ESS), Robert Edgecock (STFC), Angeles Faus-Golfe (CNRS), Markus Nordberg (CERN), Tatiana Pieloni (EPFL), Karolos Potamianos (U. Oxford), Toms Torims (Riga Technical University and CERN) and Carsten P. Welsch (U. Liverpool)

+ the steering committee:
Phil Burrows (Oxford), Bob Holland (ESI), Elias Metral (CERN), Louis Rinolfi (ESI), Maurizio Vretenar (CERN) and Nicolas Delerue (CNRS)

Who/when /where?

- The target audience is students sufficiently advanced in their studies but not yet too specialized.
 - Students in their 2nd cycle of studies (typically 3rd to 5th year of University), before the start of doctoral studies.
- 24 students have been selected.
- Multidisciplinarity of the teams is key to have them propose projects that are well suited.
- All expenses, including travel will be covered by the project.
- Dates: Tuesday 26/07/22 to Thursday 4/08/2022

Applications

- 187 applications received, 85% from I.FAST participant countries
- Large number of applications thanks to advertisement through Accelerating News, JUAS universities and personal contacts.
- 57% male, 40% female, 6% other.
- Fields of study: Engineering (39%), Physics (37%), Environmental Sciences (11%), Other scientific fields (5%), Business/Economics, law, humanities, medicine.
- Selection rate: 8,5% in science and engineering 20% in environmental sciences, 32% in other fields.
- Among physics and engineering students there were several “accelerator experts” (students with prior experience related to accelerators).

Selected participants

- The 24 selected participants come from institutions in 13 different I.FAST countries, they have 17 different citizenship (some from outside Europe: Colombia, Palestinian Territories,...).
- Good gender balance: 12 males, 11 females and 1 undisclosed.
- Field of studies:
 - 4 Accelerators experts
 - 4 Physicists
 - 4 Engineers
 - 4 Environmental scientists
 - 4 Lawyers
 - 4 from other fields

Teams

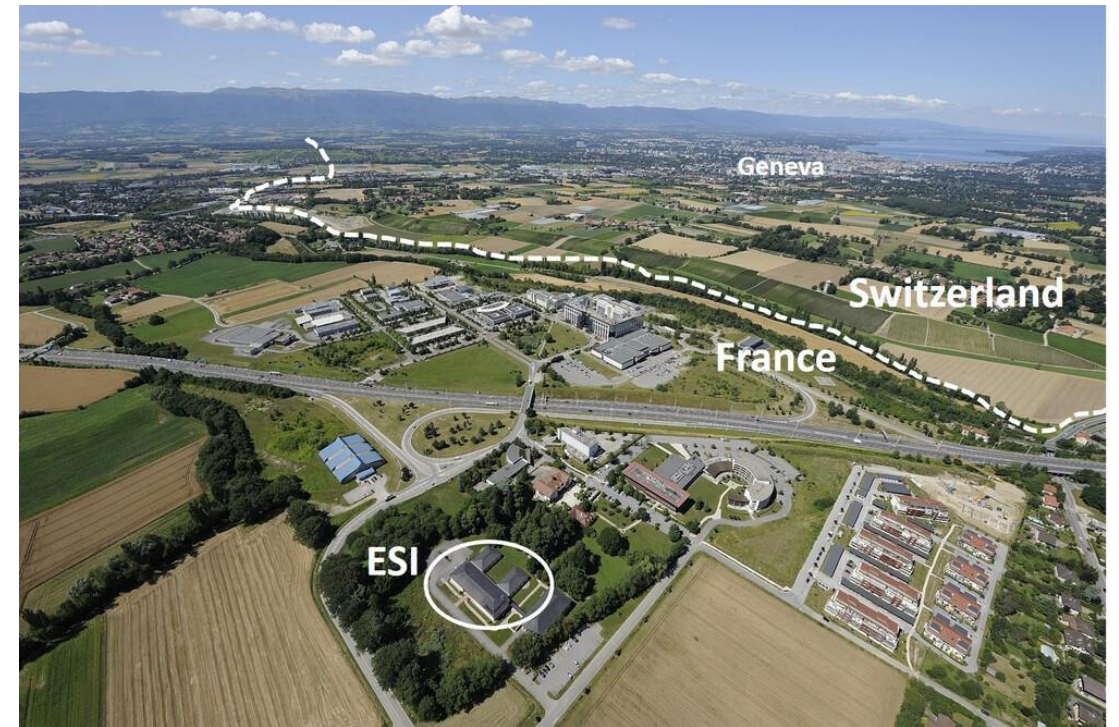
- There will be 4 teams of 6 students, each comprising:
 - One physicist
 - One engineer
 - One accelerator « expert »
 - One environmental scientist
 - One lawyer
 - One student from other fields (business or media studies).

Seminars

- One of the key element to success is to give participants access to high level expertise.
- 4 online seminars will be organised before the challenge:
 - W. Mondelaers, "Small particle accelerators and their applications in medicine and research"
 - (tbc), Accelerators for the environment
 - Lenny Rivkin, "Particle accelerators (general view)"
 - (tbc) About the Transition
- At least 6 seminars will take place during the challenge:
 - Overview of particle accelerators, Maurizio Vretenar
 - Accelerators for environment: the IAEA perspective, Valeriia STAROVOITOVA (IAEA)
 - Example of applications of accelerators for the environment (Water), Rob Edgecock
 - ...
- Still working on the final seminar program and contacting the speakers

Hosting

- The challenge will take place at the European Scientific Institute (ESI) in Archamps near Geneva:
<https://www.esi-archamps.eu/>
- ESI has strong experience in hosting scientific schools
- The ESI team is taking care of the logistics, full board accommodation and travel arrangements for the participants.



Expected outcome

- Students will be asked to prepare a final report (3-4 pages) and give a presentation in front of a jury at CERN.
 - We want a friendly competition
 - A prize will be given to the student asking the most insightful question
- Jury (some members have been approached):
 - 2 experts from knowledge transfer
 - 1 person from industry
 - 1 prominent scientist
 - 1 person from an NGO or an international organization
- If a project is sufficiently promising, we will help the team to take it one step further.

Planning (Challenge 2022)

- Early July: first online get together and introductory seminars
- Tuesday 26/07/22 to Wednesday 3/08/2022: challenge at ESI
- Thursday 4th August 2022: Presentation to the Jury at CERN
- September 2022: Feedback meeting on the challenge 2022
- *April 2023: Deliverable D2.2: report on the I.FAST CBI*

Outlook

- The call for application to the I.FAST CBI was successful: 187 applications for 24 places with a good diversity (gender, country, studies,...) of applicants
- *April 2022: Milestone MS6*
 "Definition of CBI scheme: proposed topic and organisation at ESI" has been submitted.
- Looking forward to the 1st I.FAST CBI in summer 2022.

iFAST



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