CONTROLLING BIG PHYSICS MACHINES

An outreach presentation by Pavel Maslov, a Marie Curie fellow within the oPAC project (Optimization of Particle Accelerators)*

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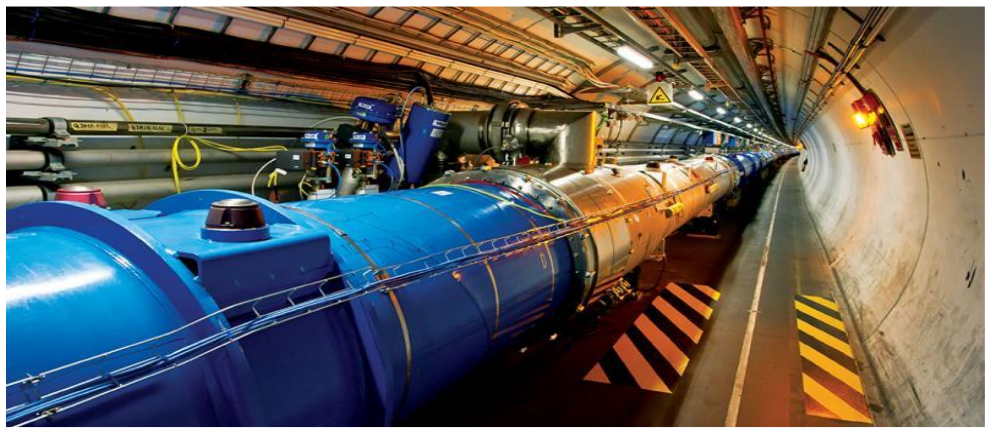
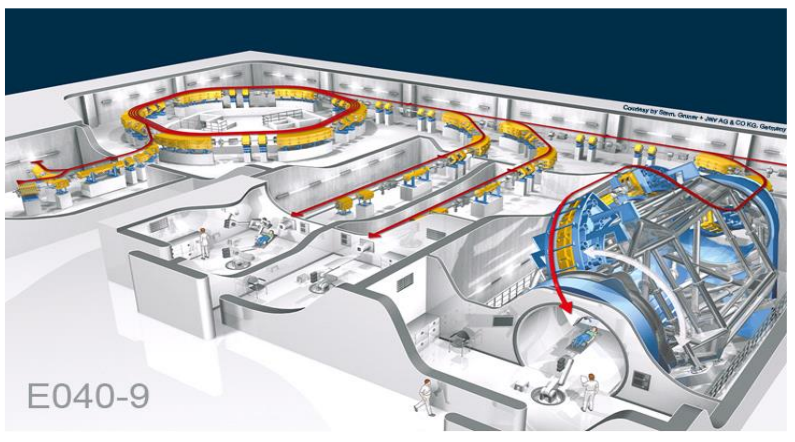
Atom smashers, fusion reactors, radio telescopes, cancer treatment facilities — all these machines are at the forefront of today's science and technology, aiming at making our life better and finding answers to such cosmic questions as to "who are we?" and "how did the Universe begin?"



Nuclear fusion offers a new source of energy to mankind, being a clean and safe alternative to nuclear power. In the last years we have finally found the Higgs boson, which is believed to be a missing piece of the creation of the Universe - the Big Bang Theory. Ion beam therapy has reduced the unwanted dose on healthy tissue, leading to a reduction of treatment-related side effects during cancer treatment.

In this talk I will give an overview of big scientific machines such as CERN, ITER, ESS, MedAustron, ALMA and speak about the challenges related to the operation and design of its control systems.



Also I will mention opportunities in the field of science for young researchers by the example of the Marie Curie Initial Training Network scheme, and try to encourage students to pursue in science, technology, engineering and math.

* The presentation is going to be in **English** and will last **30 min**, followed by a 5-10 min Q&A session

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