

FAIR and its impact on science and technology

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An international consortium of 10 countries, namely Finland, France, Germany, India, Poland, Romania, Russia, Slovenia, Sweden and the United Kingdom has set out to build one of the largest accelerator facilities in the world for fundamental and applied research. This facility is being built in Darmstadt, Germany next to the existing GSI facility. About 3000 scientists from more than 50 countries will carry out experiments to understand the fundamental structure of matter at extremes, to explore exotic forms of it and to find final answers of how the universe evolved from its primordial state into what we see today. In addition, applications, only possible with accelerators, will be pursued at this facility. The research at this facility rests on four pillars: 1) Atomic, Plasma Physics and Applications; 2) Nuclear Matter Physics; 3) Nuclear Structure, Astrophysics and Reactions; and 4) Physics with High-Energy Antiprotons. Each one of these pillars addresses the specific questions raised in the corresponding field.

In this presentation, an overview of the facility along with scientific and technical challenges will be given. In addition, some research aspects will be highlighted.