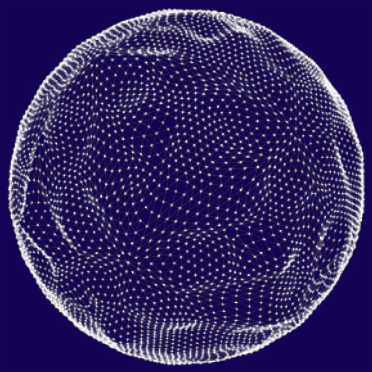


CASEIA

Comparative analysis of socio-economic impact in two particle accelerator case studies

PUBLIC SUMMARY

The ATTRACT paradigm signals a new approach towards harnessing the power of basic science for broader and more impactful socio-economic development. Our research will undertake a comparative analysis to better understand how the support offered through ATTRACT phase 1 has led to impacts such as strengthened innovation ecosystems, commercial applications of innovation, skills development, and broader social goods.

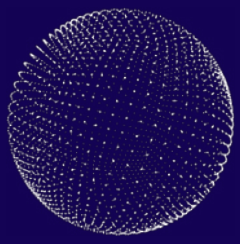
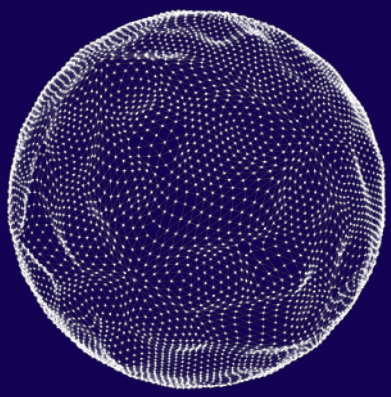
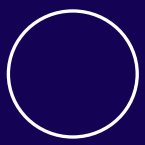
Our two case studies are cognate and well-defined engineering projects that support critical aspects of large-scale basic physics. Our ATTRACT case study is that of SCINTIGLASS, an ATTRACT phase-1 supported project that aims to develop radiation-hard and cost–effective inorganic scintillators for calorimetric detectors based on binary glass compositions doped with cerium – for application in particle physics and photodetectors.

Our comparator case study, which has not received ATTRACT phase-1 support, is situated with the PANDA (antiproton ANihilation at Darmstadt) Experiment at the Facility for Antiproton and Ion Research (FAIR). A critical part of this experiment is the development of an innovative calorimeter for antiproton research.

Our conceptual and theoretical framework will take as a point of departure the work of Henry Chesborough, which explores the means by which open innovation has the potential to leverage greater economic and social benefit from science, including from large-scale infrastructure. Building on this, our approach will also draw on the growing literature addressing the economic and social dynamics of large-scale science infrastructure. Our analytical framework will draw on the expressed aims and objectives of the ATTRACT programme.

Methodologically, the study will draw on secondary data related to the projects, as well as in-depth semi-structured interviews with all the major project stakeholders. Using an innovation ecosystems approach, we will model the actors and relationships underpinning each case study, and assess the enablers and constraints that come to bear on the achievement of innovation and socio-economic impact goals. Using a novel social learning approach, we will trace not only who has knowledge at a given time, but what form this knowledge takes and how it can be exploited.

Our final analysis will assess the differences between ATTRACT's open innovation approach, and the 'business as usual' approach of the comparator case. We will ask: through what new pathways did ATTRACT support lead to the streamlining of innovation? What were the effects of using a co-innovation approach? Were new processes, products or services created, and what were their effects on jobs and growth? Through this in-depth comparative analysis, new insights will be gained into the efficacy of the ATTTRACT paradigm and support mechanisms at the project level, which will in turn provide valuable new knowledge with respect to science policy related to scientific research infrastructure innovation ecosystems.

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