

EUROPEAN SPACE AGENCY



The European Space Agency (ESA) has long supported radiobiology experiments in LEO. More recently, ESA decided to establish a ground-based space radiation research program. To this goal, ESA first funded a preliminary study, called Investigations on Biological Effects of Space Radiation (IBER), which produced its final report in December 2006. The IBER committee reviewed the current knowledge in the field of space radiation effects, and concentrated on the potential original contribution from Europe, where a long tradition in radiobiology research at accelerators exists, generally focussing on charged-particle cancer therapy. The report recommended a strong European ground-based space radiation research program, exploiting mostly the high-energy accelerator facility at GSI in Germany, and eventually the LARIA facility in GANIL (Caen, France).

Based on this document, ESA launched in 2008 an Announcement of Opportunity (AO) for investigations into biological effects of radiation using the GSI facility. Thirteen proposals have been selected for a 2-year program starting in 2009. The [program](#) will be strongly coordinated with the NASA Space Radiation Health Program.

ESA also supports a [Topical Team](#) on Space Radiation Research. This Topical Team reviews and updates the scientific knowledge in space radiation biology and dosimetry, proposes research topics for future activities, and co-ordinates research projects in the field of space radiation biology and dosimetry in response to ESA announcements of opportunities.



Logo of the ESA exploration program ([AURORA](#))



The high-energy irradiation facility in Cave A. The robotic arm moves the samples (in flasks) to the beam position for the required exposure time. Beam is delivered by spot-scanning of the flask. This is a generally-purpose facility for irradiation of in vitro samples with high energy heavy ions.