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## **FLAIR, a next-generation facility for low-energy antiprotons**

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The recently founded Facility for Antiproton and Ion Research FAIR at Darmstadt [1] will provide antiproton beams of intensities that are two orders of magnitude higher than currently available. Within the original plan of the full facility, antiprotons can be decelerated to 30 MeV using the NESR storage ring. This has triggered a proposal for a dedicated low-energy facility FLAIR (Facility for Low-energy Antiproton and Ion Research) [2,3], which was accepted in 2005.

FLAIR is designed to provide cooled antiproton beams using two storage rings of 300 keV and 20 keV minimum energy, enhancing greatly the number of antiprotons stopped in dilute gases or ion traps for precision spectroscopy compared to CERN-AD. Further advantages of FLAIR are the availability of slow-extracted (i.e. continuous) beams of antiprotons, thereby enabling nuclear and particle physics type experiments needing coincidence techniques, and the simultaneous availability of unstable nuclei at low energies. This enables the use of antiprotons as hadronic probes for nuclear structure by determining neutron halos or skins.

An overview on the technical capabilities, planned experimental program and status of FLAIR will be given.

### References

[1] <http://fair-center.eu/>

[2] FLAIR letter of intent (2004), available from [http://gsi.de/forschung/fair\\_experiments/flair/index\\_e.html](http://gsi.de/forschung/fair_experiments/flair/index_e.html).

[3] FLAIR Technical Proposal (2005), available [http://gsi.de/forschung/fair\\_experiments/flair/index\\_e.html](http://gsi.de/forschung/fair_experiments/flair/index_e.html).

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