



Contribution ID: 35

Type: **Plenary Invited**

PAX - The Road towards Polarized Antiprotons

Friday, 14 October 2011 09:35 (35 minutes)

The international collaboration PAX (Polarized Antiproton eXperiments) pursues the goal to establish “spin-filtering” (SF) as a method to produce an intense stored beam of polarized antiprotons to be used subsequently in internal experiments. SF repeatedly exploits the spin-dependent interaction of a stored beam with a polarized hydrogen target, thereby slowly building up polarization in the beam. SF has been shown to work for protons in FILTEX (FILTer EXperiment) at TSR (Heidelberg). PAX is in the process to commission all necessary equipment at COSY (FZ Juelich), where a proton SF-measurement will be performed in this autumn. The corresponding measurement with antiprotons is foreseen at CERN/AD, making use of the tested equipment and the experience gained at COSY.

A status report of the project, which is strongly endorsed by the hadron physics community (see NuPECC LRP 2010) and supported by an ERC AdG (Polarized Antiprotons), will be given.

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Session Classification: Future Facilities and Detectors II

Track Classification: Future facilities and Detectors