Module: Elective Advanced Lectures: Experimental Physics

Module No.: physics70a

Course: Physics with Antiprotons (E)

Course No.: physics720

Category	Type	Language	Teaching hours	CP	Semester
Elective	Lecture	English	2	3	WT

Requirements for Participation:

Preparation:
Completed B.Sc. in Physics, with experience in quantum mechanics, atomic- and nuclear physics

Form of Testing and Examination:
Written or oral examination

Length of Course:
1 semester

Aims of the Course:
Insight in current research topics with antiprotons, understanding experimental methods in particle and nuclear physics, understanding interrelations between different fields of physics such as hadron physics, (astro-)particle physics, atomic physics

Contents of the Course:
Matter-antimatter asymmetry, test of the standard model, anti-hydrogen, anti-protonic atoms, antiproton beams, key issues in hadron physics with antiprotons, planned research facilities (FAIR) and experiments (PANDA)

Recommended Literature:
B. Povh, K. Rith, C. Scholz, F. Zetsche; Teilchen und Kerne (Springer, Heidelberg 8. Aufl. 2009)
D.H. Perkins; Introduction to High Energy Physics (Cambridge University Press 4. Aufl. 2000)
further literature will be given in the lecture