

Spin and diffractive physics with A Fixed-Target Experiment at the LHC (AFTER@LHC)

Friday, 14 September 2012 12:50 (20 minutes)

Summary

We report on the spin and diffractive physics at a future multi-purpose fixed-target experiment with the p or Pb LHC beams extracted by a bent crystal. The LHC multi-TeV beams allow for the most energetic fixed-target experiments ever performed, opening new domains of particle and nuclear physics and complementing that of collider physics, in particular that of RHIC and the EIC projects. The luminosity achievable with AFTER using typical targets would surpass that of RHIC by more than 3 orders of magnitude. The fixed-target mode has the advantage to allow for measurements of single-spin asymmetries with polarized target as well as of single-diffractive processes in the target region.

Primary authors: RAKOTOZAFINDRABE, Andry (IRFU/SPhN, CEA Saclay, 91191 Gif-sur-Yvette Cedex, France); GENOLINI, Bernard (IPNO, Universite Paris-Sud, CNRS/IN2P3, F-91406, Orsay, France); LORCE, Cedric (IPNO and LPT Orsay, Universite Paris-Sud); HADJIDAKIS, Cynthia (IPNO, Universite Paris-Sud, CNRS/IN2P3, F-91406, Orsay, France); FERREIRO, Elena G. (Departamento de Fisica de Particulas, Universidade de Santiago de Compostela, 15782 Santiago de Compostela, Spain); SCOMPARIN, Enrico (INFN Sez. Torino, Via P. Giuria 1, I-10125, Torino, Italy); FLEURET, Frederic (Laboratoire Leprince Ringuet, Ecole Polytechnique, CNRS/IN2P3, 91128 Palaiseau, France); SCHIENBEIN, Ingo (LPSC, Universite Joseph Fourier Grenoble 1, CNRS/IN2P3, INPG, Grenoble, F-38026, France); LANSBERG, Jean-Philippe (IPNO, Universite Paris-Sud, CNRS/IN2P3, F-91406, Orsay, France); DIDELEZ, Jean-Pierre (IPNO, Universite Paris-Sud, CNRS/IN2P3, F-91406, Orsay, France); ROSIER, Philippe (IPNO, Universite Paris-Sud, CNRS/IN2P3, F-91406, Orsay, France); ARNALDI, Roberta (INFN Sez. Torino, Via P. Giuria 1, I-10125, Torino, Italy); BRODSKY, Stanley J. (SLAC National Accelerator Laboratory, Theoretical Physics, Stanford University, Menlo Park, CA 94025, USA); UGGERHOEJ, Ulrik (Department of Physics and Astronomy, University of Aarhus, Denmark); CHAMBERT, Valerie (IPNO, Universite Paris-Sud, CNRS/IN2P3, F-91406, Orsay, France)

Presenter: LORCE, Cedric (IPNO and LPT Orsay, Universite Paris-Sud)

Session Classification: Diffraction in Hadron-Hadron Collisions (III)

Track Classification: Diffraction in hadron-hadron collisions