



Contribution ID: 25

Type: **Poster**

Experimental study of coherent interaction at high-energy in the presence of crystalline defects

Monday, 26 September 2016 18:40 (1 hour)

The presence of structural defects in a crystal strongly affects the orientational coherent effects of high-energy charged particles. Indeed, the trajectories of charged particles may be abruptly modified by a dislocation or a stacking-fault, causing the particle to dechannel. Two strips, a bent SiGe strip and a bent lithium niobate strip, were exposed to a 400 GeV/c proton beam at the external lines of CERN Super Proton Synchrotron to study the dependence of coherent interactions on crystalline defects. In spite of low channeling efficiency, the volume reflection maintains a high deflection efficiency for both the crystals. In order to have an insight into the role of dislocations on channeling and volume reflection, computer simulation via DYNECHARM++ Monte Carlo code were worked out. The results of the simulations agree with experimental records, demonstrating that volume reflection is more robust than channeling in the presence of dislocations.

Primary author: BAGLI, Enrico (FE)

Co-authors: Prof. CARNERA, Alberto (Università di Padova); BERRA, Alessandro (MIB); SYTOV, Alexei (FE); MAZZOLARI, Andrea (FE); LIETTI, Daniela (M); BOLOGNINI, Davide (INFN); DE SALVADOR, Davide (LNL); VALLAZZA, Erik Silvio (TS); GERMOGLI, Giacomo (FE); MAGGIONI, Gianluigi (LNL); BANDIERA, LAURA (FE); Dr BAZZAN, Marco (Università di Padova); PREST, Michela (MIB); ARGIOLOS, Nicola (LNL); GUIDI, Vincenzo (FE)

Presenter: BAGLI, Enrico (FE)

Session Classification: PS1: Poster Session