Simulation of orientational coherent effects in Geant4

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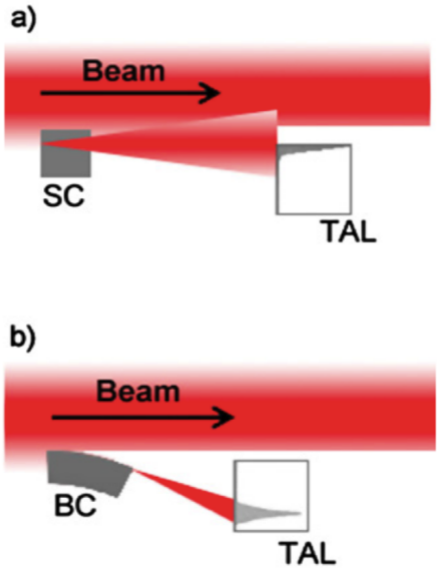
Highlights

Beam manipulation of high and very-high-energy particle beams is a hot topic in accelerator physics:

- Bent crystals allow the steering of particle trajectories thanks to the strong electrical field generated between atomic planes.
- Collimation experiment with bent crystals carried out successfully at the CERN -LHC



Highlights

Geant4 toolkit has been adapted to allow simulation of channeling

- Physics processes are wrapped to modify cross-section and final states
- Takes into account channeling of particles in crystal planes

Simulation calculations are in excellent agreement with experiment results