

Channeling biasing

Current implementation

- The channeling process acts as a layer between the Geant4 processes and the kernel. The channeling process is “Forced” to happen.
- At each step into a crystal the direction of the particle momentum is changed and a multiplier for the material density is passed to a biasing process.
- The biasing process is based on the GB01 extended example, in particular on the classes:
 - GB01BOptrChangeCrossSection
 - GB01BOptrMultiParticleChangeCrossSection
- Depending on the process type the density passed by the channeling process is the electronic or the nuclear one. The process types biased are:
 - fElectromagnetic
 - fHadronic
 - fPhotolepton_hadron

Open Issues

- The density and the cross section vary step by step. The biasing process of the GB01 example was developed for a single variation of the density in a material.
- The biasing process modifies the weight of the track. This value should not change for channeling.