



Contribution ID: 17

Type: **Poster**

## **PS3-05 Study of the Influence of Defects on Channeling and Volume Reflection with DYNECHARM++**

*Thursday, 9 October 2014 17:00 (1h 30m)*

Various kinds of defects may affect the displacement of the atoms in a crystal. The probability to undergo dechanneling, i.e., to leave the channeling state, rises up because of the presence of dislocations. On the contrary, the deflection efficiency for volume reflection is very much the same as for a perfect bent crystal. In order to simulate the influence of the defects on channeling and volume reflection, a routine has been specifically developed for the DYNECHARM++ toolkit. Because of the strong centrifugal force in the neighborhood of defects, the step size of the integration of particle trajectory has to be small compared to crystal length. As a consequence, the computation of the trajectories of many particles requires a high computational cost. Thus, a model for the parallelization and the vectorization of the DYNECHARM++ is underway in collaboration with Colfax International, partner of the Intel corporation

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**Session Classification:** Poster Session