Contribution ID: **203** Type: **Oral presentation**

Past and Future Channeling Experiments in the US

Tuesday, 25 September 2018 14:30 (30 minutes)

In recent years, several key experiments channeling high-energy electrons and positrons have been performed in the US at SLAC. using the FACET and the ESTB beam facilities. The results include measurements of channeling parameters in a little-explored energy range and the first experimental demonstration at high energy of quasi-channeling oscillations predicted by Sytov et al. Quantitative measurements provide data suitable to benchmark simulations and, e.g., design crystal-based beam collimation systems. Since these measurements the experiments have shifted towards studying the gamma-ray emission by high-energy electrons passing through crystals with tantalizing albeit preliminary results. Crystalline undulator devices have been proposed and are being investigated; some of these suitable for electron beams as well as positron beams. There is renewed interest in channeling radiation as a means to increase the efficiency of positron targets for high-energy linear colliders. SLAC FACET-II and ESTB are prime facilities for experimental investigation and quantifying the enhancement over amorphous targets that can be expected.

The presentation will review the work done by our group and provide an outlook of planned investigations.

Primary author: Dr WIENANDS, H.-Ulrich (Uli) (Argonne National Laboratory)

Presenter: Dr WIENANDS, H.-Ulrich (Uli) (Argonne National Laboratory)

Session Classification: S1.3 Channeling & Radiations in Crystals