



Contribution ID: 0

Type: **not specified**

Welcome / Training the next generation of accelerator experts

Wednesday 26 June 2013 08:30 (30 minutes)

Many of today's most advanced research infrastructures rely on the use of particle accelerators. This includes for example synchrotron-based light sources and FELs, high energy accelerators for particle physics experiments, high intensity hadron accelerators for the generation of exotic beams and spallation sources, as well as much smaller accelerator facilities where cooled beams of specific (exotic) particles are provided for precision experiments and fundamental studies.

Moreover, particle accelerators are very important for many commercial applications, such as for example medical applications, where they are used for the provision of radioactive isotopes, x-ray or particle beam therapy. Furthermore, they are widely used for material studies and treatment, lithography, or security applications, such as scanners at airports or cargo stations.

The full potential of any particle accelerator can only be exploited if the performance of all its parts are continuously optimized, if numerical tools are made available that allow for developing and improving advanced machine designs and for benchmarking modelling codes against experimental results, if beam diagnostics methods are developed in partnership between the academic and industry sectors to monitor beams with ever higher intensities and brightness, shorter pulse lengths or smaller dimensions, and if the state-of-the-art in control and data acquisition systems is pushed further by the international research community to link all the above.

These are the aims of the oPAC project. Funded by the European Union with a budget of 6 M€, oPAC is one of the largest-ever research and training networks within the 7th Framework Program. In this talk, I will present an overview of the project, our research activities and planned international training events.

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