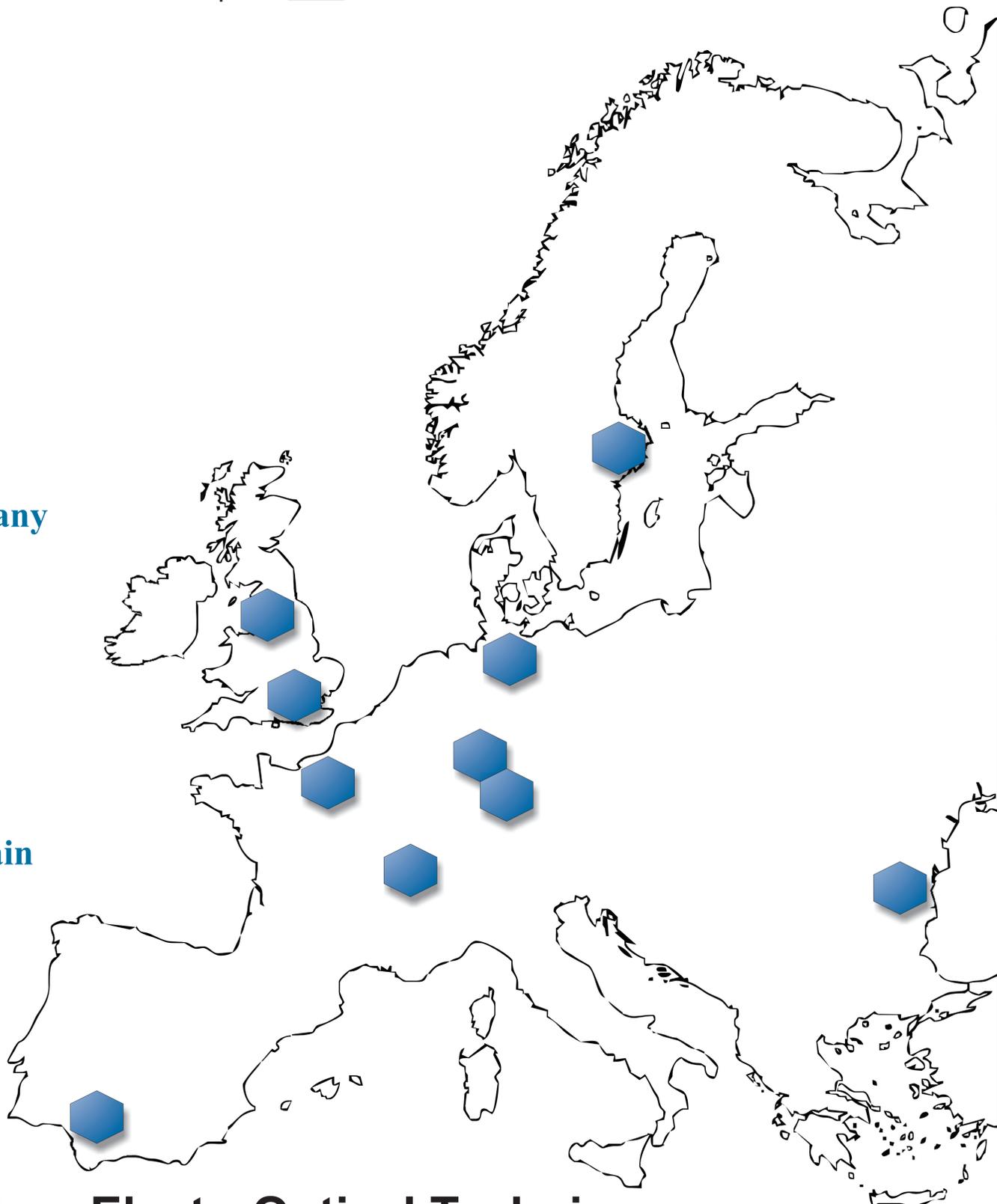


DITANET

Diagnostic Techniques for particle Accelerators - a European Network

- ★ University of Liverpool, UK
- ★ CEA, Saclay, France
- ★ CERN, Geneva, Switzerland
- ★ DESY, Hamburg, Germany
- ★ GSI, Darmstadt, Germany
- ★ HIT GmbH, Heidelberg, Germany
- ★ IFIN-HH, Magurele, Romania
- ★ Royal Holloway
University of London, UK
- ★ Stockholm University, Sweden
- ★ CNA / University of Seville, Spain



ESR Position at CERN on Electro-Optical Techniques for the Measurements of Charged Particle Beam Longitudinal Profiles

The Compact Linear Collider (CLIC) study at CERN aims at providing high luminosity 3TeV centre of mass energy e+/e- collider. The machine accelerates very short electron bunches with 150 fs sigma. One of the main challenges for beam instrumentation resides in providing accurate measurements of longitudinal beam profile with time resolution better than 20fs. One of the most promising devices would be based on electro-optical techniques and CERN is collaborating on this subject with the ultrafast electro-optics diagnostics group based jointly at Dundee University and STFC Daresbury Laboratory, which has an international reputation in the measurement of femtosecond relativistic electron beam bunches. These measurements were pioneered by the group, and have evolved into a range of techniques involving terahertz optical pulses, non-linear optics and ultrashort electron beam transport systems.

We are seeking to offer a DITANET- Early-stage Researcher position based at CERN with the focus on the development of an electro-optical test set-up to measure longitudinal bunch lengths at the CLIC Test Facility 3. The trainee will also spend a considerable amount of time at AStEC working with the ALICE test accelerator to gain experience from the ultrafast electro-optics diagnostics group based jointly at Dundee University and STFC Daresbury Laboratory. Appropriate training in accelerator physics and engineering will be provided through the CERN and the Cockcroft Institute lecture series.

More details of these projects and studentships may be obtained by contacting Dr Thibaut Lefevre at CERN (thibaut.lefevre@cern.ch), Professor Allan Gillespie at University of Dundee (w.a.gillespie@dundee.ac.uk) or Dr Steve Jamison at AStEC (steven.jamison@stfc.ac.uk).

Partners

