Contribution ID: **70** Type: **talk**

Feasibility Study of the AWAKE Facility at CERN

Monday, 3 June 2013 18:45 (15 minutes)

A Proton Driven Plasma Wakefield Acceleration Experiment has been proposed as an approach to eventually accelerate an electron beam to the TeV energy range in a single plasma section. To verify this novel technique, a proof-of-principle demonstration experiment, AWAKE, is proposed using 400 GeV proton bunches from the SPS.
Detailed studies on the identification of the best site for the installation of the AWAKE facility resulted in proposing the CNGS facility as best location. Design and integration layouts covering the beam line, the experimental area and all interfaces and services are shown. Among other issues, radiation protection, safety and civil engineering constraints are raised.

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Session Classification: WG1 - Electron beams from plasmas

Track Classification: WG1 - Electron beams from plasmas