



Contribution ID: 74

Type: **talk**

The AWAKE Facility at CERN

Monday, September 14, 2015 4:00 PM (30 minutes)

The Advanced Proton Driven Plasma Wakefield Acceleration Experiment (AWAKE) aims at studying plasma wakefield generation and electron acceleration driven by proton bunches. It is a proof-of-principle R&D experiment at CERN and the world's first proton driven plasma wakefield acceleration experiment. The AWAKE experiment will be installed in the former CNGS facility and uses the 400 GeV proton beam bunches from the SPS. The first experiments will focus on the self-modulation instability of the long (rms ~12cm) proton bunch in the plasma. These experiments are planned for the end of 2016. Later, in 2017/2018, low energy (~15 MeV) electrons will be externally injected to sample the wakefields and be accelerated beyond 1GeV.

The main goals of the experiment will be summarized; an overview of the beam lines and the experimental area will be given; the status and planning of the facility will be shown.

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Session Classification: WG1 - Electron beams from plasmas

Track Classification: WG1 - Electron beams from plasmas