## SP4: ELECTRON BEAM DIAGNOSTICS OF TARLA FACILITY

Thursday 14 July 2016 11:39 (3 minutes)

The Turkish Accelerator and Radiation Laboratory at Ankara (TARLA) is an Infrared Free Electron Laser (IR-FEL) and Bremsstrahlung facility. The TARLA facility is expected to provide 1-10 ps duration pulses with center wavelengths from 2.5-250  $\mu$ m at a repetition rate of 13 MHz.

The current plans and the completed diagnostic for TARLA facility are presented. TARLA injector line diagnostics instrumentation includes: Button beam position monitoring, transverse profile and temporal beam structure monitoring (optical transition radiation beam viewers), beam charge measurements (Faraday cups, Integrated Current Transformers), pepper-pot beam emittance measuring devices and electron beam loss monitoring. The diagnostics provided straight controlling of electron beam behavior and to adjust requested beam parameters within the design specifications. Investigation of the diagnostic instrumentation of the TARLA is given along with measurement examples and discussion of theoretical calculations.

Primary author: Mr KAYA, Caglar (Ankara University Institute of Accelerator Technologies)

**Co-authors:** Dr AKSOY, Avni (Ankara University Institute of Accelerator Technologies); Mr AYDIN, Ayhan (Ankara University Institute of Accelerator Technologies); Mr KOC, Burak (Ankara University Institute of Accelerator Technologies); Mr KAZANCI, Emre (Ankara University Institute of Accelerator Technologies); Mr TURAL, Muge (Ankara University Institute of Accelerator Technologies); Prof. YAVAS, Omer (Ankara University Institute of Accelerator Technologies); Dr KARSLI, Ozlem (Ankara University Institute of Accelerator Technologies); Mr KARAKILIC, Vahap (Ankara University Institute of Accelerator Technologies); Mr KARAKILIC, Vahap (Ankara University Institute of Accelerator Technologies)

**Presenter:** Mr KAYA, Caglar (Ankara University Institute of Accelerator Technologies)

Session Classification: Session 1: Beam Diagnostics