Contribution ID: **145** Type: **talk**

High-Gradient Normal-Conducting Radio-Frequency Photoinjector System for the STAR Project

Monday, 14 September 2015 17:00 (15 minutes)

Radiabeam Technologies presents the development of a high gradient normal conducting radio frequency (NCRF) 1.6 cell photoinjector system for the STAR project (Southern european Thomson source for Applied Research), in progress at the University of Calabria (Italy). The RF Gun is designed to operate with a peak accelerating electric field of 120MV/m and up to a repetition rate of 100Hz. The input RF power is fed through a single waveguide and a dummy waveguide is used to avoid field dipole components. The design includes enhanced cell-to-cell coupling to produce a 15 MHz mode separation, fat-lipped symmetric coupling slots and racetrack geometry for the coupler cell to minimize field quadrupole components. The photoinjector system also includes the emittance-compensation solenoid. Full overview of the project to date is discussed along with basic design, engineering, manufacturing, brazing and final tuning.

Primary author: Dr FAILLACE, Luigi (RadiaBeam Technologies)

Presenter: Dr FAILLACE, Luigi (RadiaBeam Technologies)

Session Classification: WG3 - Electron beams from electromagnetic structures, including dielectric and laser-driven structures

Track Classification: WG3 - Electron beams from electromagnetic structures, including dielectric and laser-driven structures