Contribution ID: **126**   Type: **poster**

RF power distribution System and experimental characterization of RF Gun and C-band accelerating structures for the ELI-NP Linac

Monday, 14 September 2015 20:00 (30 minutes)

ELI-NP is a gamma-source based on electron-photon Compton back-scattering under construction in Romania by the European consortium Eurogammas. The collision of a train of 32 electron bunches accelerated up to ≈750 MeV by a linac with an intense 1000 nm laser pulse recirculated 32 times through the IP at a repetition rate of 100 Hz produces photons with tunable energy. The electron linac energy booster is based on two SLAC-type S-band (f=2856MHz) and twelve C-band (f=5712MHz) Travelling Wave(TW) accelerating structures. Because of the multi-bunch operation, the cells of all the C-band TW structures are equipped with high-order modes dampers to avoid beam break-up transverse instability. The high power RF for the RF Gun and for the S-band and C-band accelerating structures will be provided respectively by two Toshiba E37314 and ten Toshiba E37212 klystrons both driven by ScandiNova solid state modulators. A complete description of the RF power distribution system of the ELI-NP Linac will be reported. Moreover, results of the conditioning and tuning of the first C-band accelerating structure will be presented, together with Bead-drop measurements of the RF Gun.

Primary author: CARDELLI, Fabio (ROMA1)

Co-authors: GALLO, Alessandro (LNF); MOSTACCI, Andrea (ROMA1); ALESINI, David (LNF); FICCADENTI, Luca (INFN); PIERSANTI, Luca (ROMA1); PALUMBO, Luigi (ROMA1); BELLAVEGLIA, Marco (LNF); BONI, Roberto (LNF)

Presenter: CARDELLI, Fabio (ROMA1)

Session Classification: Poster Session 1 (WG1-WG2-WG3-WG4) and Wine

Track Classification: WG4 - Application of compact and high-gradient accelerators/Advanced beam manipulation and control