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## 6D phase space electron beam analysis and machine sensitivity studies for ELI-NP GBS

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

The ELI-NP Gamma Beam Source is now under construction in Magurele - Bucharest (RO). Here an advanced source of gamma photons with unprecedented specifications of brilliance ( $>10^{21}$ ), monochromaticity (0.3%) and energy tunability (0.2–20.0 MeV) is being built, based on Inverse Compton Scattering in the head-on configuration between an electron beam of maximum energy 740 MeV and a high quality high power psec laser beam. These requirements make the ELI-NP GBS an advanced and challenging gamma ray source. The electron beam dynamics analysis and control regarding the machine sensitivity to the possible jitters and misalignments are presented. The effects on the beam quality are illustrated providing the basis for the alignment procedure and jitters tolerances.

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