

Physics and Applications of High Brightness Beams



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Electron yields stabilization for the EuAPS betatron source

The EuAPS project (EuPRAXIA Advanced Photon Source) aims at realizing an X-ray photon source for users applications. The photons will be produced by betatron radiation mechanism inside a laser plasma accelerator, exploiting an internal injection scheme. The source will produce short pulses of photons in the spectral range 1 - 10 keV for a wide set of applications ranging from imaging to spectroscopy to pump-and-probe. The presence of external users makes the source stability as important as the performances in terms of photon yield and spectral properties.

In this contribution, we will show numerical studies aimed at assessing the relative stability of different internal injection schemes together with attempts at optimizing the source performances by plasma target engineering.

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