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Laser beam circulator for high brightness Inverse Compton Scattering Sources

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The present paper will present the EuroGammas consortium development on the optics and laser of interaction point of the inverse Compton scattering source (ICS) of the ELI-Nuclear Physics project. The interaction point optical system of the ICS is based on a non resonant laser beam cavity allowing the circulation of one or two laser pulses to be focalized 32 times on a electron bunch train to produce X-ray to Gamma ray beam with high spectral brightness.

The laser beam circulator optical system and interaction point laser tests prior to the installation on site will be reported . Applications of a laser beam circulator in the context of compact high brightness power sources will be discussed.

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