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Exploiting Non Redundant Aperture Interferometry as a Diagnostics Tool for Synchrotron Light Characterization

Tuesday 9 September 2025 16:00 (2 hours)

We recently introduced a novel interferometric method inspired by radio astronomy, utilizing a Non-Redundant Aperture (NRA) mask with self-calibration to fully characterize the two dimensional transverse shape of electron beams from a single-shot interferogram.

This paper reports the latest advancements in this technique, including a new data analysis approach based on closure amplitudes, which removes the need for self-calibration. We also demonstrate the method's applicability to wavefront sensing, and we explore its potential for resolving beam halos superimposed on well-defined Gaussian beam core.

Footnotes

Funding Agency

I have read and accept the Conference Policies

Yes

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