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## **Novel two-stage concept for ultra-low energy spread beams from plasma accelerators**

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Plasma-based accelerators are a promising technology that could significantly reduce the size and cost of future accelerator facilities. However, the quality of the produced beams, particularly regarding the energy spread (typically on the 1-10% range), is still not sufficient for applications. We present here a novel concept for plasma-based acceleration which could deliver multi-GeV beams with an unprecedented energy spread performance on the 0.1% (total) and 0.01% (slice) range. This scheme, based on the combined use of a magnetic chicane with multiple plasma-accelerating stages, therefore offers a new path towards groundbreaking applications such as compact free-electron lasers.

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**Session Classification:** Special topics