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Beam Driven Plasma Sources

Monday, 7 April 2025 16:30 (30 minutes)

This talk provides an overview of recent progress and future directions in the development of plasma sources for beam-driven acceleration. I will review key achievements in designing and testing plasma discharge systems capable of generating long, uniform plasma channels for efficient acceleration. Emphasis is placed on high repetition rate operation, where experimental studies have demonstrated promising advances in managing heat loads, optimizing vacuum integration, and mitigating material degradation. The presentation will also address the remaining challenges, including enhancing plasma stability, improving system reliability, and refining diagnostic techniques to better control plasma parameters under continuous operation. This roadmap outlines the essential steps required to advance plasma source technology toward practical implementation in next-generation accelerator facilities.

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