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Upgrade Plans for the Argonne Wakefield Accelerator

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The Argonne Wakefield Accelerator (AWA) supports research on advanced acceleration, beam manipulation, and beam production with the goal of enabling the next generation of accelerators for the energy frontier. Additionally, this research is synergistic with R&D on compact X-ray light sources. We discuss near-term upgrade plans to improve beam brightness and stability. Furthermore, we describe longer-term upgrades aimed at increasing beam energy to enable next-generation beam-driven wakefield accelerators. These upgrades include generating bright 500-MeV electron bunches using the two-beam accelerator concept and potentially doubling the beam energy of the AWA facility through collinear-wakefield acceleration.

Working group

WG7 : Linear Colliders

Primary author: ODY, Alexander (Argonne National Laboratory)

Co-authors: CHEN, Gongxiaohui (ANL); DORAN, Scott (ANL); HA, Gwanghui (ANL); LIU, Wanming (ANL); LU, Xueying (Northern Illinois Univ / Argonne National Laboratory); MARGRAF-O'NEAL, Rachel (ANL); PIOT, Philippe (Argonne); POWER, John (Argonne National Lab); WHITEFORD, Charles (Argonne National Laboratory); WISNIEWSKI, Eric (ANL); JING, Chunguang (Euclid Techlabs)

Presenter: ODY, Alexander (Argonne National Laboratory)

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