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Alternative designs for ADS drivers: FFAGs and electrons

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The talk considers alternative possibilities for ADS drivers. The energy and current required for a typical design are somewhat beyond the reach of conventional cyclotrons and synchrotrons; linear accelerators can supply the required power but they are expensive, and their price is a barrier to the wide adoption of the ADSR concept. The Fixed Field Alternating Gradient (FFAG) combines the best features of cyclotron and synchrotron performance: the rationale is outlined and a review given of the current state of development. The talk also considers the proposal to use electron accelerators for ADSR, generating neutrons through excitation of the giant dipole resonance by bremsstrahlung photons, and shows how this may have applications for low power systems.

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