

EuroNNAC and EuPRAXIA Workshop on Pilot Applications of Electron Plasma Accelerators (PAEPA)



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Search for dark photons using high energy e beams and other applic's

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Given a clean high energy electron beam, new and improved fixed-target or beam-dump experiments are possible. An example is the NA64 experiment which is searching for hidden sector physics such as dark photons using the secondary SPS electron beam at an intensity of $\sim 10^6$ e-/s. With the expectation of being able to increase this rate by at least a factor of 100 to 1000, sensitivity to new physics is correspondingly extended. This work was originally presented at the Physics Beyond Colliders Workshop at CERN based on the use of a beam from AWAKE. The idea has still applicability at lower electron beam energies. A review of other HEP applications for plasma wakefield acceleration will also be briefly given. Having about 15 minutes would be good.

Presenter: WING, Matthew (UCL)

Session Classification: Session 3: HEP applications