

# Primary Beam Lines for the AWAKE project at CERN

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The construction of the first proof of principle experiment which uses proton bunches to generate plasma wakefield acceleration (AWAKE) is proposed at CERN.

The facility could be installed at the end of the existing CNGS proton beam tunnel as the neutron physics program terminated in 2012.

Minor modifications of the existing proton line have to be applied to fit the experiment, adapt the optics to fulfill the AWAKE requirements and integrate the laser for gas ionisation and self modulation seeding.

Studies on the electron beam line design and evaluation of space charge effects on the optics are presented.

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