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The AWAKE Run 2 programme and beyond

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Plasma wakefield acceleration is a promising technology to reduce the size of particle accelerators. Use of high energy protons to drive wakefields in plasma has been demonstrated during Run 1 of the AWAKE programme at CERN. Protons of energy 400 GeV drove wakefields that accelerated electrons to 2 GeV in under 10 m of plasma. The AWAKE collaboration is now embarking on Run 2 with the main aims to demonstrate stable accelerating gradients of 0.5–1 GV/m, to accelerate bunches of electrons with high beam quality, and develop plasma sources scalable to 100s of metres and beyond. By the end of Run 2, the AWAKE scheme should be able to provide electron beams for particle physics experiments and several possible experiments have already been evaluated. This talk summarises the AWAKE Run 2 programme as well as the possible application of the AWAKE scheme to novel particle physics experiments.

Collaboration / Activity

AWAKE Collaboration

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