Contribution ID: **657** Contribution code: **TUPA102** Type: **Poster Presentation**

AWAKE: driving plasma wakefields with a proton bunch and accelerating electrons for particle phyics applications

Tuesday, 9 May 2023 16:30 (2 hours)

High-energy proton bunches offer the potential to drive wakefields over very long distances in plasma. An externally-injected electron bunch can thus in principle experience very large energy gain (hundreds of GeVs to TeVs) in a single plasma with GeV/m accelerating gradient. AWAKE explores this potential with 400GeV proton bunches from the CERN SPS. Based on the succesful demonstration of seeded self-modulation of the proton bunch*and of acceleration of test electrons, a plan was devised to produce 10-200GeV electron bunches with parameters suitable for application to particle physics*[**]. We will outline key experimetal results and the general plan for the experiment.

Funding Agency

AWAKE collaboration

Footnotes

F. Batsch (AWAKE Collaboration), Phys. Rev. Lett. 126, 164802 (2021)AWAKE Collaboration, Nature volume 561, pages363–367 (2018)[**]P. Muggli (AWAKE Collaboration), J. Phys.: Conf. Ser. 1596 012008 (2020)

I have read and accept the Privacy Policy Statement

Yes

Primary author: MUGGLI, Patric (Max-Planck-Institut für Physik)

Presenter: MUGGLI, Patric (Max-Planck-Institut für Physik)

Session Classification: Tuesday Poster Session

Track Classification: MC3: Novel Particle Sources and Acceleration Techniques: MC3.A22: Plasma Wakefield Acceleration