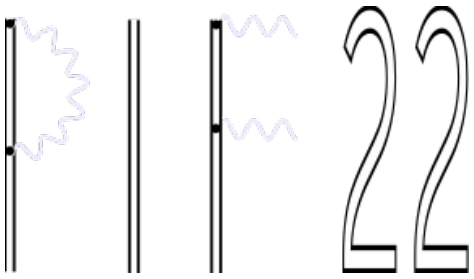

Contribution ID: **4** Type: **not specified**

Particle-beam scattering from strong-field QED

Thursday 1 September 2022 10:15 (20 minutes)

We consider the scattering of probe particles on an ultraboosted beam of charge, in the case that the fields of the beam are strong and must be treated nonperturbatively.

We show that the fields of the ultraboosted beam act as stochastic plane waves-scattering amplitudes (of elastic scattering, nonlinear Compton and nonlinear Breit-Wheeler) are obtained without approximation by averaging plane wave scattering amplitudes over all possible plane wave parameters.

The relevant plane waves are ultrashort and, as such, scattering on ultraboosted beams does not exhibit the conjectured strong-field behavior of QED based on the locally constant field approximation.

Authors: Dr ADAMO, Tim (University of Edinburgh); Dr ILDERTON, Anton (University of Edinburgh); Dr MACLEOD, Alexander J (ELI Beamlines)

Presenter: Dr MACLEOD, Alexander J (ELI Beamlines)

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