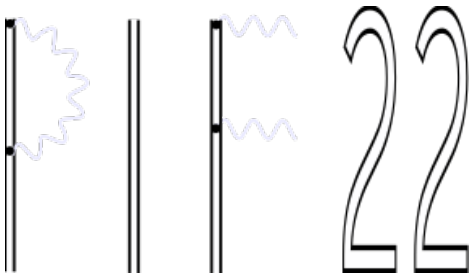

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Photon merging in the collision of two laser pulses

Tuesday 30 August 2022 15:45 (20 minutes)

The quantum vacuum nonlinearity allows for the effect of laser photon merging in the collision of two (or more) laser beams. As the merged photons origin from a manifestly inelastic process, their energy differs significantly from the background photons of the driving lasers, making them accessible for experiments. However, the number of merged photons is typically considered to be very small. In this talk, results on the emission characteristics of the merged signal photons will be presented, demonstrating that the availability of just two laser beams is sufficient to achieve a sizable signal in experiments with state-of-the-art technology.

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