## Seventeenth Marcel Grossmann Meeting



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Type: Talk in a parallel session

## Electromagnetic interactions near the black hole horizon

Thursday, 11 July 2024 17:20 (20 minutes)

In this talk, I will describe a theory for scalar QED near the black hole event horizon. In particular, I will show how to compute the electromagnetic eikonal S-matrix from elastic  $2 \rightarrow 2$  scattering of charged particles exchanging soft photons in the black hole eikonal limit. The resulting ladder resummation agrees perfectly with the result from the first quantised formalism developed by 't Hooft, whereas the field-theoretic formulation allows for a computation of a wider range of amplitudes. Some possible applications of the formalism developed here will be also discussed.

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