Department of Theoretical Physics

THE QUANTUM SPACETIME SEMINAR SERIES

Effect of small cosmological constant on electromagnetic memory effect

(Zoom Seminar)

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Zoom link shall be shared separately

Electromagnetic memory effect is a well known classical observable associated with universal features of infrared physics of QED in flat spacetime. In this talk, we will address the perturbative corrections to this effect in presence of positive cosmological constant. We consider a generic scattering process that takes place in a region of size R inside the static patch of the de Sitter spacetime such that R is smaller than the curvature length scale of the background. The effect of curvature can thus be studied perturbatively and we obtain the asymptotic electromagnetic field generated by the scattering process highlighting its universal aspects. Finally we will discuss the resultant corrections to the flat spacetime velocity memory effect and classical soft photon theorems in presence of small cosmological constant .

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