



Department of  
Theoretical Physics

# THE QUANTUM SPACETIME SEMINAR SERIES

## Soft Theorems and Asymptotic Symmetries in Effective Field Theories

**Prahar Mitra**  
(IAS, Princeton, USA)

**Date:** Aug. 27, 2018  
**Time:** 11.30 am  
**Venue:** A-304, TIFR



We study soft theorems in effective field theories. Unlike its leading counterpart, the subleading soft photon theorem is sensitive to higher derivative interactions in the EFT and is, generically, not universal. We show that despite the non-universality, they continue to have an interpretation as a Ward identity for a certain class of divergent large gauge transformations. This provides evidence for the conjecture that all soft theorems in quantum field theory can be recast into a statement of asymptotic symmetries of the S-matrix.