Contribution ID: **6** Type: **not specified**

Does my favourite QFT have a standard UV completion?

Thursday, 12 January 2017 09:50 (25 minutes)

Many quantum field theories are only well-defined at low energies - with a breakdown of unitarity above some energy cutoff. If there is a physically sensible way to introduce new degrees of freedom which restore unitarity, then this apparent breakdown needn't worry us - we say that the original theory admits a *UV completion*. However, if it is **not** possible to UV complete the theory, this is very troublesome - it means that the original low energy theory cannot describe a reality which is consistent with QFT's axioms (i.e. our Universe). So it is of great importance to establish whether our favourite QFTs (whatever they may be) can have UV completions. In this talk I will present some conditions which any low energy effective field theory ought to satisfy in order to have a standard UV completion, and discuss the particular example of massive gravity.

Primary author: Mr MELVILLE, Scott (Imperial College London)

Co-authors: Dr TOLLEY, Andrew (Imperial College London); Dr DE RHAM, Claudia (Imperial College London); Dr ZHOU, Shuang-Yong (Imperial College)

Presenter: Mr MELVILLE, Scott (Imperial College London)

Session Classification: Parallel Sesion: Gravity and Gauge Theories