

## VII Leopoldo García-Colín Mexican Meeting on Mathematical and Experimental Physics



Contribution ID: 25

Type: **not specified**

### **DANIEL SUDARSKY: A novel account for the nature and magnitude of the Dark Energy**

*Friday, 21 February 2020 16:30 (1 hour)*

I will discuss some ideas about the interface between the quantum and gravitational realms, and the emergence of space-time itself, which led us to specific speculations about the way in which anticipated discrete aspects of quantum gravity might become manifest at the macroscopic level. We then will discuss an alternative description of gravitation, initially explored by Einstein, and known as Unimodular Gravity which can, under suitable conditions, incorporate such novel effects. The result is a mechanism for the generation an effective cosmological constant, that turns out to be naturally of the same order of magnitude as that dictated by observations. If this turns out to be correct the empirical case for the presence of a dominant dark energy component in the present day universe would turn out to be the first concrete evidence of a discreteness in the fabric of space-time. I will end with some comments about how the approach might also help in resolving the so called “ $H_0$  tension”.

**Session Classification:** SHORT TALKS

**Track Classification:** SYMPOSIUM ON BLACK HOLES AND GRAVITATIONAL WAVES