

Speaker: Vidotto, F.

Title: **Correlations in Spinfoam Cosmology**

Abstract:

Today's different cosmological structures are understood to have originated in the quantum fluctuations of the primordial geometry of the universe. Quantum gravity should provide the techniques to directly compute the correlations characterising those quantum fluctuations. In particular, Spinfoam Cosmology provide a framework where we can address this question. I present a possible strategy in the context of a cosmological model based on the simplest regular triangulation of a 3-sphere, truncate to a few degrees of freedom beside the the scale factor. The dynamics is given by spinfoam transition amplitudes, truncated to the first order in the vertex expansion. We consider the resulting spinfoam "wave function of the universe", that can be interpreted as a tunnelling from nothing to a 3-geometry. This generates a probability distribution over 3-geometries, which in turn determines correlations between spatial regions. I conclude discussing the first numerical results of this construction.