



CENTRO DE
MATEMÁTICA
UNIVERSIDADE DO PORTO

GEOMETRY AND TOPOLOGY SEMINAR

EPRL/FK Asymptotics and the Flatness Problem: a concrete example

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Abstract. Spin foam models are a "state-sum" approach to loop quantum gravity which aims to facilitate the description of its dynamics, an open problem of the parent framework. Since these models' relation to classical Einstein gravity is not explicit, it becomes necessary to study their asymptotics - the classical theory should be obtained in a limit where quantum effects are negligible, taken to be the limit of large triangle areas in a triangulated manifold with boundary.

In this talk we will briefly introduce the EPRL/FK spin foam model and known results about its asymptotics, proceeding then to describe a practical computation of spin foam and asymptotic geometric data for a simple triangulation, with only one interior triangle. The results are used to comment on the "flatness problem" - a hypothesis raised by Bonzom(2009) suggesting that EPRL/FK's classical limit only describes flat geometries in vacuum.

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