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# SEMINÁRIO DE GEOMETRIA

**Dia 31 de Março (sexta-feira), às 14h00, sala 6.2.38**

## Topological Lattice Models in Geometry and Physics

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**Abstract:** Lattice models arise in physics as discrete approximations of quantum field theories (QFT). Topological quantum field theories (TQFT) on the other hand by definition are QFTs, that can be defined on smooth or topological space-times, as opposed to the usual pseudo-Riemannian space-times required by QFTs. Interesting TQFTs can be defined as lattice models, giving exactly solvable models in 2 dimensions for example. As an example in mathematics the Turaev-Viro TQFT gives a well defined topological invariant of 3-manifolds.

We will give an overview of these phenomena and present our work on a 4-dimensional gravitational lattice model.

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