

# Seminário de sistemas dinâmicos e estocásticos

IMECC - UNICAMP

## Título: Compatible discretization of Hamiltonian systems and symplectic groupoids

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### Resumo:

We consider hamiltonian-type dynamical systems determined by a function and a Poisson bracket in the state space  $M$ . The idea is to find a method of discretizing (thinking about numerical approximations, for example) the flow of the underlying ODE in a way that preserves the underlying geometry (the symplectic leaves where the exact solutions live and their symplectic structure). We then introduce an explicit local symplectic groupoid construction associated with  $M$  and explain how this structure can be used to attack the discretization problem.