

UNICAMP – IMECC
Departamento de Matemática

Seminário de Sistemas Dinâmicos e Estocásticos

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Título: Minimal configurations for
the Frenkel-Kontorova model on a quasicrystal

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Resumo. We consider the Frenkel-Kontorova model of a one dimensional chain of atoms submitted to a potential. This potential splits into an interaction potential and a potential induced by an underlying substrate which is a quasicrystal. Under standard hypotheses, we show that every minimal configuration has a rotation number, that the rotation number varies continuously with the minimal configuration, and that every non negative real number is the rotation number of a minimal configuration. This generalizes well known results obtained by S. Aubry and P.Y. le Daeron in the case of a crystalline substrate.

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