SEMINÁRIO

SISTEMAS DINÂMICOS

24 Setembro | 10h30 | sala 6.2.33

The small divisors problem in the quantum Kicked Rotator (II)

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Abstract:

The Kicked Rotator is one of the central models in studies of chaos theory. Its quantization was the subject of great interest in the 1980s, but since the 1990s, interest faded. I hope to rekindle interest in this subject. This is meant to be a working seminar and it will consist in five parts. In the first two parts I will present the basics of the classical Kicked Rotator followed by the basics of the quantum Kicked Rotator. In the third part I will present a connection to discrete Schrödinger operators. In the first section of this part I will review the basics of discrete Schrödinger operators and then present the connection to the quantum Kicked Rotator in the second section. In the fourth part I will start by talking about basic examples of the problem of small divisors in quantum mechanics and following that, I will present perturbation theory for the quantum Kicked Rotator and my results on this field. In the final part I will review what remains to be done and, hopefully, a lively discussion will ensue. The small divisors problem in the quantum Kicked Rotator (II).