



Mês de: **OUTUBRO 2012**

## SEMINÁRIO DE ANÁLISE E EQUAÇÕES DIFERENCIAIS

**Dia 31 de Outubro (quarta-feira), às 13h30, na Sala B3-01**

Geometric optics and the Cauchy problem for nonlinear Schrödinger equation

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**Abstract:**

We show how instability results concerning the Cauchy problem for nonlinear Schrödinger equations can be established thanks to the description of high frequency regimes. This can be viewed as an application of nonlinear WKB analysis, whose justification is considered as a black box in this talk. Two families of results are presented: loss of regularity in positive index Sobolev spaces (based on one phase WKB analysis), and loss of regularity in negative index Sobolev spaces (based on multiphase Sobolev regularity). In the last case, we emphasize a more general pathological behavior of Sobolev spaces with negative regularity.

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