# Seminário de sistemas dinâmicos e estocásticos

**Departamento de Matemática - IMECC - UNICAMP**

# Solving the conflict between differentiation and nonlinear operations

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### Resumo:

We will recall the classical conflict between differentiation and non- linear operations that appears in form of paradoxes and mistakes when one does calculations on non smooth functions even when these calculations are indispensable. Then we recall how this can be solved rather generally and easily [Bull. Amer. Math. Soc. 23,1990,2,pp.251-268] by a simple mathematical construction that indicates how to compute. We expose the use of this method in physics according to [Lecture Notes in Math. 1532, Springer Ver- lag, 1992], insisting on a possible trap in modeling physics when one does this for the first time. The conflict appears in stochastic PDEs and can be solved with this method.

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**Local:** Sala 121 do IMECC.

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