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CENTRO DE MATEMÁTICA E APLICAÇÕES FUNDAMENTAIS
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SEMINÁRIO DE ANÁLISE E EQUAÇÕES DIFERENCIAIS

Dia 23 de Janeiro (quinta-feira), às 14:45h, na Sala B3-01

Exposed solutions to differential inclusions

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Abstract:

Following an idea by A. Bressan, we (jointly with G. Colombo) present a new method for proving existence of solutions to an autonomous differential inclusions in finite dimensions based on the properties of uniformly distributed *Brownian motion*. By using this technique we obtain two kinds of results. First, in some especial case we prove that *almost all solutions* (in the sense of an associated probabilistic measure) have extremal derivatives almost everywhere. On the other hand, we prove a general theorem on existence of an exposed solution to a differential inclusion with convex-valued Hölder continuous right-hand side.

We compare proposed method with the famous *Baire category approach* based on topological concept of the smallness.

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