

# Seminário de sistemas dinâmicos e estocásticos

IMECC - UNICAMP

**Título: Variability of paths and differential systems with BV-coefficients .**

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## Resumo:

Partial differential equations and differential systems play fundamental role in many aspects of our daily life. However, in many applications, especially in the field of stochastic differential or partial differential equations, the underlying equation does not make sense in a classical way, and one has to consider integral equations instead. Moreover, even the concept of integral is subtle. For example, a typical situation is that one needs to consider  $\int_0^t \varphi(X_s) dY_s$ , where  $\varphi$  is a given function and  $X, Y$  are some continuous but non-differentiable objects. Several powerful theories have emerged to treat these situations, such as rough path theory or the theory of regularity structures. On the other hand, these methods are applied in situations where the function  $\varphi$  is typically smooth, and most of the existing methods break down completely if one allows discontinuities in  $\varphi$  (provided that  $Y$  is not too "nice"). In particular, this is the case if  $\varphi$  is a general BV-function.