Seminário de sistemas dinâmicos e estocásticos

IMECC - UNICAMP

Rough Path

Ismael Bailleul

(Universite Rennes 1, France)

Resumo:

Rough differential equations are controlled ordinary differential equations driven by controls that are not sufficiently regular to give a classical meaning to the equation. Typical examples are given by equations driven by sample paths of stochastic processes. While Itô's theory of stochastic differential equations provides a probabilistic solution theory in a semimartingale setting, the solution map associating the solution path of the equation to the driving semimartingale control is not continuous in a pathwise sense in any sensible topology. The theory of rough differential equations aims at giving a (probability free) framework where one can make sense of controlled ordinary differential equations driven by controls of low regularity. This requires that we change our understanding of what a control is. We shall give in this course a concise self-contained introduction to this theory, following the "(approximate flow)-to-flow" approach.

Program -

Tue.7 - Lecture 1: A snapshot

Wed.8 - Lecture 2: From approximate flows to flows (1)

Thu.9 - Lecture 3: From approximate flows to flows (2)

Fri.10 - Lecture 4: Rough paths

Wed.15 - Lecture 5: Flows driven by rough paths (1)

Thu.16 - Lecture 6: Flows driven by rough paths (2)

Fri.17 - Lecture 7: Flows driven by rough paths (3)

Data: Início - 07 de julho de 2020 - 10:00 am – 11:30.

Local: https://meet.google.com/fys-aift-mdv.

Consulte a programação em [www.ime.unicamp.br/ssde]