UCD School of Mathematics and Statistics

Colloquium Seminar

Title: A field theory for smooth dynamics

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Date: Tue 24th March 2020 at 3:00PM

Location: Seminar Room SCN 1.25

Abstract: Renormalization in one and two dimensional smooth dynamics has been very successful in describing the small scale geometrical properties of zero entropy attractors. The observed geometrical universality is sometimes described by a renormalization fixed point but often the dynamics of the renormalization operator is by itself very intricate.

Tresser and Coullet were inspired by renormalization in statistical mechanics when they introduced Renormalization in dynamics. However, there is no formal relation between these theories. Surprisingly, there is a field theory for smooth dynamics which explains the universal geometrical structure of zero entropy attractors. It brings renormalization dynamics and renormalization in physics a bit closer to each other.