Barcelona Analysis Seminar **2023–2024**

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Time: 15:00 CET
Room: CRM A1 (Universitat Autònoma de Barcelona)

Entropy solutions to macroscopic IPM

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The IPM system models the motion of an incompressible and viscous fluid in a porous media. The case in which the density of this fluid takes just two values separated by an interface is known as the Muskat problem. When the part of the fluid with the bigger density is always above the other part, the equation of the evolution of the interface is ill-posed. In this situation some "mixing solutions" arise in which the interface disappears and is replaced by a strip where the densities mix. We will review what is known about the existence and (lack) uniqueness of this kind of solutions and introduce the concept of subsolution. Finally, we will study the existence of some mixing solutions which came from a scheme proposed by F. Otto to select a subsolution.