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Seminar EDPs

Speaker: Karina Vilches, Universidad Católica del Maule(UCM).

Title: Simulating Microenvironmental effects in tumor progression.

Abstract. In this presentation, we will see the preliminary numerical exploration of a mathematical approach that captures and explores a wide range of mechanisms and biological variabilities in tumor progression is presented. Precisely, the mathematical model captures cell-cell interactions including micro-environment effects in solid tumor progression. The biological principle consists in to assume that the tumor cells interact with Tumor-Associated Macrophages, and simultaneously with the extracellular matrix. Such two different mechanisms are modeled coupling the parabolic-elliptic systems proposed in the literature for representing the chemotaxis-haptotaxis and multi-species chemotaxis. Our main goal consists in visualize biological scenarios in tumor progression applying the results of non-linear analysis and numerical approximation of solutions for PDE systems. We visualize the simultaneous blow-up for radial solutions and the micro-environmental effects over such a phenomenon for the first time.

Martes 20 de octubre a las 4pm, en el link zoom

https://uchile.zoom.us/j/88121344517?pwd=aHYreWIyWDBGcVUxdGNMZjN2SzNFZz09
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