

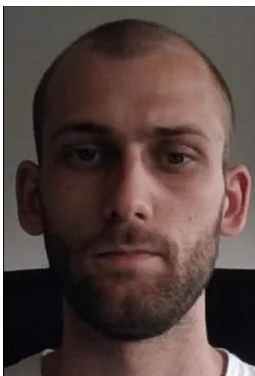


Numerical modeling of biological systems via isogeometric approaches

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Date	23 June 2026
Time	11.30–12.30
Room	2R, DICAM, Mesiano



In vitro replicas of human organs that recapitulate several relevant features are becoming an alternative to more classical animal models. However, their diffusion is limited by the high cost of the assay design, since it mainly relies on a trial-and-error approach. To provide a numerical tool for the design of such devices, we develop isogeometric-based numerical approaches.

This seminar briefly reviews spline-based discretization methods - such as classical Galerkin, Collocation, and their immersed settings - and focuses on their specialization in the context of electrophysiology, cardiac mechanics, and cell-growth. Numerical benchmarks present the main features of the proposed approaches.