



UNIVERSITÀ DI PARMA

DIPARTIMENTO DI SCIENZE MATEMATICHE, FISICHE E INFORMATICHE

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COLLOQUIUM



**Mercoledì 24 novembre
ore 15:30, Aula A**

Prof. Alfio Quarteroni

Politecnico di Milano e
Ecole Polytechnique Fédérale de Lausanne

Nell'ambito dei Colloquium di Dipartimento il prof. Alfio Quarteroni, mercoledì 24 novembre alle ore 15:30 presso l'Aula A del Plesso di Matematica/Informatica terrà un seminario dal titolo:

Physics-Based and Data-Driven Algorithms for the Simulation of the Heart Function

Tutti sono invitati a partecipare.

Organizzatori: Proff. Adriano Tomassini, Alessandra Lunardi.

Abstract: In this talk, I will present a mathematical model that is suitable to simulate cardiac function, thanks to its capability to describe the interaction between electrical, mechanical, and fluid-dynamical processes occurring in the heart.

The model comprises a system of nonlinear differential equations (either ordinary and partial) featuring a multi-physics and multi-scale nature. Efficient numerical strategies are devised to allow for the analysis of both heart function and dysfunction. These strategies rely on both classical physics-based numerical discretization methods and machine-learning algorithms, as well as on their interplay.