DEPARTAMENTO DE MATEMÁTICA
TÉCNICO LISBOA

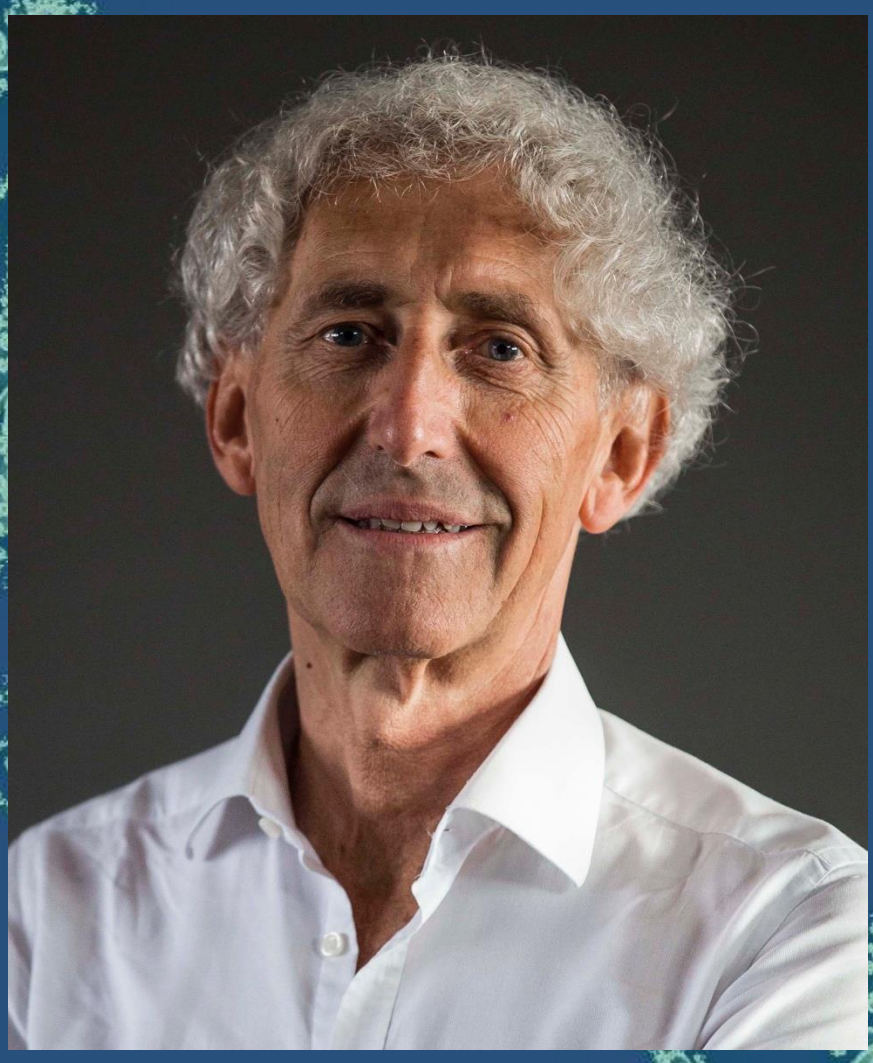
# COLLOQUIUM DE MATEMÁTICA

# Revisiting the Role of Mathematicians in the Era of Artificial Intelligence

**In applied mathematics, effective problem solving begins with precise problem formulation, highlighting the importance of the initial problem-setting phase. Without a clearly defined problem, identifying suitable tools and techniques for resolution becomes arduous and often futile. This transition from problem setting to problem solving is pivotal within the broader framework of knowledge advancement. Despite the remarkable progress of AI tools, they remain reliant on the groundwork laid by human intelligence. Mathematicians, leveraging their adeptness in discerning patterns and relationships within data and variables, play a crucial role during this phase. This lecture will introduce fundamental mathematical concepts encompassing both traditional machine learning and scientific machine learning. The latter offers an optimal platform for the harmonious fusion of problem setting and problem solving, bolstered by profound domain expertise.**

## Alfio Quarteroni

Politecnico di Milano, Milan, Italy &
École Polytechnique Fédérale de Lausanne, Switzerland



## 28 de outubro, 2024 | 17h – 18h

Instituto Superior Técnico, Campus Alameda
Anfiteatro PA1, Pavilhão de Matemática

www.math.tecnico.ulisboa.pt/seminars/colloquium/