



## Distinguished Lecture Series

## Turnpike control and deep learning

## **Professor Enrique Zuazua**



Chair in Applied Analysis, Alexander von Humboldt Professorship. FAU Erlangen-Nürnberg (Germany)

Chair of Computational Mathematics, University of Deusto/Deusto Foundation, Bilbao - Basque Country (Spain)

Professor of Applied Mathematics, Department of Mathematics, UAM, Madrid (Spain)

Txopitea eta Pakea, Distinction of the Eibar City Hall, Basque Country, Spain (2020) Ambassador of Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany (2015-Present)

Member of Academia Europaea (2015-Present)

Doctor Honoris Causa, Université de Lorraine, France (2014)

Humboldt Research Award 2013, Univ. of Erlangen-Nürenberg, Germany (2014-2015)

Severo Ochoa Award to BCAM, MINECO, Spain (2014-2017)

CIMI Excellence Chair, Toulouse, France (Spring Semester) (2013-2014)

"Research in Paris" Award, Paris City Hall (Fall Semester) (2013-2014)

Best article Prize. Ann. Inst. H. Poincaré, Anal. Non-Linéaire (2008)

Julio Rey Pastor Spanish National Prize in "Mathematics and Technologies of Information and Communication" (2007)

Full member of "Jakiunde", the Basque Academy for Science, Arts and Letters (2007-Present)

Science and Technology Euskadi Prize of the Basque Government (2006)

Highly Cited Researcher, the ISI Institute (Thomson) (2004)

Date: 25 November 2020 (Wednesday)

Time: 4:00-5:00 p.m. GMT+8 (Hong Kong Time)

Venue: Online via Zoom (Meeting ID: 947 0888 1860)

## **Abstract**

The turnpike principle asserts that in long time horizons optimal control strategies are nearly of a steady state nature. In this lecture we shall survey on some recent results on this topic and present some its consequences on deep supervised learning.

This lecture will be based in particular on recent joint work with C. Esteve, B. Geshkovski and D. Pighin.

