



POLITECNICO  
DI TORINO



Dipartimento di  
Scienze Matematiche  
G. L. Lagrange

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Thursday **October 3, 2019** at 14:30

Politecnico di Torino, DISMA, Aula Buzano (third floor)

## Stéphane DURAND

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### Analysis of the Best Response Dynamics in Potential Games

Prof. Giacomo Como introduces the seminar.

#### Abstract

Nash equilibria are a point of interest in game theory as both a tool in predicting the behavior of a system by being generally an easier to compute approximation of the optimal solutions, with many theorem bounding the price of anarchy. One of the first algorithm to find one such equilibrium is the best response dynamics. Simple in concept and execution but taking an exponential time in worst case, it was long considered as merely a tool of proof instead of an usable algorithm.

My work introduce a model for defining and computing other complexity criterion, most notably the average complexity, This model also allow to analyses more general cases of applications. I will show that the dynamics is fast and robust in average.

#### Biography

Stéphane Durands did his Phd in Grenoble at LIG and Gipsa-lab (financed by PERSYVAL-lab) under the supervision of Bruno Gaujal and Federica Garin (thesis defended on December 2018).