



POLITECNICO
MILANO 1863



DIPARTIMENTO DI
SCIENZE E TECNOLOGIE
AEROSPAZIALI

30 October 2019, h. 12:00
Building B12, Second Floor, Sala Consiglio DAER
Via La Masa, 34 - Milano

Seminar

Control of Large-Scale Adaptive Optics Systems

Paolo Massioni

The performance of Earth-based telescopes is significantly limited by the atmosphere turbulence. Adaptive optics is an established real-time control technique that allows compensating for such detrimental effects. The control of the next generation of extremely large astronomical telescopes, with primary mirrors in the order of magnitude of 30 m diameters, faces several computational complexity challenges due to the high order of the systems involved (ten of thousands of actuators and sensor channels). In this talk we will see some possible approaches that will allow dealing with this high complexity and high dimensionality problems.

Paolo Massioni got his MSc in Aerospace Engineering from Politecnico di Milano, Italy, in 2005 (best graduate of his year), and his PhD in Control Engineering from Delft University of Technology, The Netherlands, in 2010.

From 2010 to 2012, he has been a postdoctoral researcher jointly at the University of Paris 13 and at the National French Aerospace Lab (ONERA), both in France; this postdoc has been funded thanks to a Rubicon grant from the Netherlands Organisation for Scientific Research (NWO) and the Marie Curie COFUND Action. From the year 2012, he is a permanent academic staff member (“maître de conférences”) of the Laboratoire Ampère CNRS, at the French National Institute for Applied Science (INSA) of Lyon, France. Paolo Massioni has been a visiting scholar at the European Space Agency (Noordwijk, the Netherlands), at the Thirty Meter Telescope (Pasadena, California), and at the Northwestern Polytechnical University (Xi’an, China). His main research interests are distributed control with applications to aerospace systems, and nonlinear systems performance.