



Politecnico  
di Torino

## DIMEAS SEMINAR

# A PRIMER ON PSEUDOSPECTRAL CONVEX OPTIMIZATION WITH APPLICATIONS IN ENTRY, DESCENT, AND LANDING

## SPEAKER



**Marco Sagliano**

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Systems



**Monday 3 March 2025,  
11.00 am**



**Meeting room, III floor, DIMEAS  
Politecnico di Torino**

## ABSTRACT

In recent years convex optimization has become a prominent technology in space applications, with a special emphasis on Entry, Descent, and Landing scenarios. In this talk we will follow the genesis and the maturation of pseudospectral convex optimization methods for EDL, from the basic 3DoF formulation of rocket landing to the more advanced and realistic applications, including NASA's high-mass entry demonstrator for Mars landing, and the formulation for the CALLISTO demonstrator, a reusable rocket currently developed by DLR, JAXA and CNES together.

### Short bio

Marco Sagliano is a Senior GNC Research Engineer at the German Aerospace Center (DLR), in Bremen, Germany since 2011.

He received his Master's Degrees at the University of Naples Federico II in Italy, in 2008. He worked as a GNC System Engineer at GMV Aerospace from 2008 to 2011, in Madrid, Spain. In parallel to his research activity at DLR he earned in 2016 a PhD at the University of Bremen in cooperation with TU Delft.

Since 2018 he is visiting GNC Specialist at JAXA, to work on the CALLISTO reusable rocket, jointly developed by DLR, JAXA, and CNES.

Since 2024 he's an Associate Editor for the Journal of Guidance, Control, and Dynamics, and in December 2024 he became an ERC consolidator grantee. He's a senior AIAA member, and his technical interests include computational guidance, trajectory optimization and robust control.