

SpeechPizza

Friday, 11 April 2025

12:00 - 13:00, D011

lcis.grenoble-inp.fr

Huu Thien Nguyen nguyen@fe.up.pt

(postdoc, Univ. of Porto, Portugal)

Title: Optimization- Based Control Design for Challenging Maneuvers in Nonholonomic Vehicles

Abstract: This work studies various nonholonomic vehicles and solves the challenging maneuvers pertaining to them. The concerned nonholonomic systems span from hybrid Unmanned Aerial Vehicles (UAVs), fixed-wing UAVs, multicopters, drifting mobile robots, to in-wheel motor vehicles. Starting from the modeling aspect, we obtain motions for those vehicles executing the challenging maneuvers using optimization-based techniques, namely optimal control and Nonlinear Model Predictive Control (NMPC).

Wendell Daniel Fernandes De Sousa wendell-daniel.fernandes-de-sousa@lcis.grenoble-inp.fr

(PhD candidate in the ORSYS team, working with E. Perret)

Title: New Generation of Optically Controlled PCM-based RF Switches

Abstract: Phase Change Material (PCM) switching relies on modifying its structural phase through a controlled temperature gradient, enabling transitions between conductive and insulating states. Various heating methods exist, including direct electrical activation via current flow through the PCM and indirect heating via an intermediate resistive layer. While direct heating is limited to specific RF applications, indirect heating can degrade switch performance due to accelerated aging and insulation challenges. Optical activation presents a promising alternative by reducing the presence of conductive materials near RF lines, significantly impacting the material's resistivity.

The science behind pizza!

