Reductive Control in the Management of Redundant Actuation

Authors : Mkhinini Maher, Knani Jilani

Abstract : We present in this work the performances of a mobile omnidirectional robot through evaluating its management of the redundancy of actuation. Thus we come to the predictive control implemented. The distribution of the wringer on the robot actions, through the inverse pseudo of Moore-Penrose, corresponds to a -geometric- distribution of efforts. We will show that the load on vehicle wheels would not be equi-distributed in terms of wheels configuration and of robot movement. Thus, the threshold of sliding is not the same for the three wheels of the vehicle. We suggest exploiting the redundancy of actuation to reduce the risk of wheels sliding and to ameliorate, thereby, its accuracy of displacement. This kind of approach was the subject of study for the legged robots.