ABSTRACT

Omni-directional robots are becoming more and more common in recent robotic applications. They offer improved ease of maneuverability and effectiveness at the expense of increased complexity. Frequent applications include but are not limited to robotic competitions and service robotics. The goal of this work is to find a precise dynamical model in order to predict the robot behavior. Models were found for two real world Omni-directional robot configurations and their parameters estimated using a prototype that can have 3 or 4 wheels. With 4 motors and wheels it is expected that the robot will have better effective floor traction, less wheel slippage at the expanse of more complex mechanics, more complex control and additional current consumption.