# Article information:

Robust Model Predictive Tracking Control for Robot Manipulators With Disturbances | IEEE Journals & Magazine | IEEE Xplore  
<https://ieeexplore.ieee.org/document/9058969>

# Article summary:

1. This article presents a robust model predictive control (MPC) algorithm based on tube approach for time-varying trajectory tracking control of robot manipulators.

2. The proposed algorithm takes into account the effect of disturbances explicitly, and ensures the satisfaction of constraints by tightening them for the nominal system.

3. The performance of the proposed algorithm is validated through an experimental study using a Baxter robot, and theoretical properties such as constraints satisfaction, recursive feasibility, and stability are established.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

The article provides a comprehensive overview of the proposed robust model predictive tracking control (MPTC) algorithm for robot manipulators in the presence of both state and input constraints as well as disturbances. The authors provide a detailed description of the problem statement, MPTC algorithm, theoretical properties, and experimental results to validate their approach.

The trustworthiness and reliability of this article can be assessed by looking at its potential biases and their sources, one-sided reporting, unsupported claims, missing points of consideration, missing evidence for the claims made, unexplored counterarguments, promotional content, partiality, whether possible risks are noted or not presenting both sides equally.

In terms of potential biases and their sources, it appears that there is no clear indication that any particular bias has been introduced in this article. The authors have provided an objective overview of their proposed MPTC algorithm without introducing any personal opinions or preferences which could lead to biased conclusions.

The article does not appear to be one-sided in its reporting either; it provides an unbiased overview of both the advantages and disadvantages associated with using MPTC algorithms for robot manipulators in terms of constraints satisfaction, recursive feasibility and stability. Furthermore, all claims made by the authors are supported by evidence from experiments conducted using a Baxter robot as well as theoretical analysis which further adds to its credibility.

In terms of missing points or considerations or missing evidence for claims made there does not appear to be any major issues with this article; all relevant points have been discussed thoroughly with sufficient evidence provided to back up each claim made by the authors. Additionally there do not appear to be any unexplored counterarguments or promotional content present in this article which could lead to partiality or lack of objectivity in its conclusions.

Finally it should also be noted that possible risks associated with using MPTC algorithms have been mentioned throughout this article which further adds to its trustworthiness and reliability; overall this article appears to be

# Topics for further research:

* Robust Model Predictive Control (MPC)
* Robot Manipulator Constraints
* Recursive Feasibility and Stability
* Disturbance Rejection
* Real-Time Control of Robots
* Model Predictive Tracking Control (MPTC) Algorithm

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