DISCUSSION

SLIDING MODE BASED PREDICTIVE CONTROLLER OF A SPHEROIDAL UNDERWATER VEHICLE

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COMMENTS

Prof. P Venugopal Senior Assistant Professor, SENSE, VIT University Vellore, TN State, India

The following key points are made after reading this research paper:

1) The approach taken in the paper looks interesting and innovative;
2) The problem and solution are well motivated;
3) The design of proposed hybrid controller (Sliding Mode & Model Predictive Controller) is a new and robust technique. Both qualitative and quantitative analysis and stability analysis are discussed in this paper; and
4) The proposed flowchart for MPC looks interesting. MPC tuning is given in a standard and systematic way.

The results and discussions are highly impressive. Overall it is a new idea of controlling underwater vehicle.

Prof. D John Pradeep, Assistant Professor, SENSE, VIT University, Vellore, TN State, India

I consider that the combination of sliding mode control and predictive control is a new concept in the field of control systems and therefore to be welcomed. Stability analysis is very important for underwater vehicles and Sliding Mode Control is the best technique for stability analysis.

The proposed flow chart is interesting and the time domain analysis shows the robustness of the vehicle.

Prediction is essential for vehicle path trajectory tracking control. The controller is showing satisfactory results compared with conventional control techniques like PD, LQR. The proposed controller can also be extended to helicopter control.

AUTHOR'S RESPONSE

The comments made by **Prof. Venugopal** and **Prof. Pradeep** are positive and motivating further in my research. Once again thanks for the entire editorial team of IJME.