



RESEARCH ON LQR ZONE CONTROL ALGORITHM FOR PICKING ROBOT ARM

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Abstract- This paper aims at improve the poor stability and the fluttering problems on picking apples for picking robot arm, we establish the dynamics model of Picking Robot Arm using Lagrange equation and divide the whole movement space of Picking Robot Arm into stretch area and picking area by analyzing the dynamic model. Making full using of the model, we put forward to the strategy based on the extension energy control and LQR Zone control. Furthermore, we solve the problem on ensuring the picking robot arm's energy increasing for the picking stretch process. The energy stability control study on establishing the robust performance analysis and design in theory lays a foundation for other relevant stability study.

Index terms: Picking Robot Arm, the zone control, dynamic model, LQR.