ABSTRACT

SMC is one of the controlling methods used to gain the exact attitude of satellite, but this method is rarely used to the LEO. Through this minithesis, the writer had done some research to find the possible causes. As the first step, a modelling to a non-spinning satellite was done in the LEO orbit as quaternion. Control portion from the sliding mode controller was used to manage the satellite's attitude. The design result then tested through simulations so that the analyzing part could be done afterwards. The result got the writer come to a conclusion that there is a deviation on the satellite's attitude caused by atmospheric drag, where it impacts to the sliding mode controller's performance to satellite with LEO orbit.

keywords: Low earth orbit satellite, quaternion, sliding mode control