ABSTRACT

SYSTEMS AND METHODS FOR ESTIMATING ERRORS IN GYROSCOPE SENSORS

Embodiments of the present disclosure provide systems and methods that establish non-linear components of gyroscope errors which have not been studied or explored earlier. These errors include but are not limited to non-linear dynamic error which is a function of the angular velocity itself. Bias instability has been observed within the same environment of temperature and atmospheric pressure. In other words, the embodiments of the present disclosure analyse and models static bias errors and dynamic non-linear errors in the gyroscope sensor which may be used to model and correct errors accordingly in subsequent measurements. The system provide solution(s) when there is no way of directly estimating temperature for bias correction of gyroscope, by estimating a temperature change by considering indirect measurements from other sensors present onboard the device.

[To be published with FIG. 3 and FIG. 3 (Contd)]