
The attitude correction in the strapdown inertial navigation systems

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Strapdown inertial navigation system (SINS) determines the coordinates, velocity and attitude of the object. The system main drawback is the error, which is accumulating with time. The article proposes the methods to reduce attitude errors. These methods are based on the satellite navigation system (SNS) for SINS correction. The first method allows us to measure and compensate instrument errors. The second one uses the external information from the satellite system for damping SINS errors. The article presents error models and both methods analysis. The inertial systems testing results in a helicopter confirm the method effectiveness.

Keywords: *inertial navigation system (INS), gyroscope, accelerometer, global navigation satellite system (GNSS)*

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