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Least-squares fitting of a three-dimensional ellipsoid to noisy data

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Abstract

© 2014 Alexandra Malyugina, Konstantin Igudesman and Dmitry Chickrin. This paper deals with the problem of fitting a three-dimensional ellipsoid to a noisy data point set in the context of three-axis magnetometer calibration. It describes methods of ellipsoidal fitting, based on various concepts of ellipsoid representation, error function definition and data simulation. The efficiency of the new approaches is demonstrated through simulations.

Keywords

Ellipsoid fitting, Least squares fitting