



ISSN 1000-6893

CN 11-1929/V

**E** Engineering Village

航空学报 » 1985, Vol. 6 » Issue (6) :556-564 DOI:

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惯性加速度计与气压高度计之随机误差模型的辨识与估计

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IDENTIFICATION AND ESTIMATION OF THE RANDOM ERROR MODELS FOR INERTIAL ACCELEROMETER AND BARO-ALTIMETER

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摘要 本文根据为某科学实验飞机设计最优气压/无线电/惯性混合高度系统的需要,利用机载数据采集系统,对惯性平台上的垂直加速度计以及在典型进场飞行条件下之气压高度计的随机误差模型进行了辨识与估计。应用时间序列分析方法,最优地估计了有关随机误差源的ARIMA模型。

关键词:

Abstract: In accordance with the national research project in West Germany "Flight Control" (SFB-58 Flugfuehrung) it is necessary to develop an optimal baro/radio/inertial hybrid altimeter for the research aircraft DO-2S. For this purpose, the random error models for vertical accelerometers on inertial platform and a barometric altimeter under the conditions of landing approach are identified and estimated with the aid of two onboard data acquisition systems. The optimal estimate of ARIMA model of the associated random error sources is obtained by the time series analysis. A number of actual problems, such as data preprocessing and effect of measurement noise on error model, are also discussed.

Keywords:

Received 1983-09-23;

引用本文:

王壬林. 惯性加速度计与气压高度计之随机误差模型的辨识与估计[J]. 航空学报, 1985, 6(6): 556-564.DOI:

Wang Renlin. IDENTIFICATION AND ESTIMATION OF THE RANDOM ERROR MODELS FOR INERTIAL ACCELEROMETER AND BARO-ALTIMETER[J]. Acta Aeronautica et Astronautica Sinica, 1985, 6(6): 556-564.DOI:

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