
# 3D PASSIVE LOCALIZATION IN THE PRESENCE OF LARGE BEARING NOISE (ThuAmOR9)

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**Abstract :**

This paper derives three−dimensional passive bearings−only localization algorithms and examines their performance when the sensor measurements are corrupted by large additive noise. Among the algorithms studied, the maximum likelihood (ML) estimator is shown to have the best localization performance. The ML estimate is computed using the iterative Gauss−Newton (GN) algorithm with the initial guess obtained from a pseudolinear estimator. Bearing measurements are averaged over finite−length non−overlapping windows in order to reduce the computational complexity of the GN algorithm when the number of bearing measurements is large. Simulation studies are provided to illustrate the superior performance of the ML estimator in a radar localization application.

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