



## Gaussian Mixture Reduction for Bayesian Target Tracking in Clutter (Paperback)

By David J Petrucci

Biblioscholar, United States, 2012. Paperback. Condition: New. Language: English . This book usually ship within 10-15 business days and we will endeavor to dispatch orders quicker than this where possible. Brand New Book. The Bayesian solution for tracking a target in clutter results naturally in a target state Gaussian mixture probability density function (pdf) which is a sum of weighted Gaussian pdfs, or mixture components. As new tracking measurements are received, the number of mixture components increases without bound, and eventually a reduced-component approximation of the original Gaussian mixture pdf is necessary to evaluate the target state pdf efficiently while maintaining good tracking performance. Many approximation methods exist, but these methods are either ad hoc or use rather crude approximation techniques. Recent studies have shown that a measure-function-based mixture reduction algorithm (MRA) may be used to generate a high-quality reduced-component approximation to the original target state Gaussian mixture pdf. To date, the Integral Square Error (ISE) cost-function-based MRA has been shown to provide better tracking performance than any previously published Bayesian tracking in heavy clutter algorithm. Research conducted for this thesis has led to the development of a new measure function, the Correlation Measure (CM), which gauges the similarity between...



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