

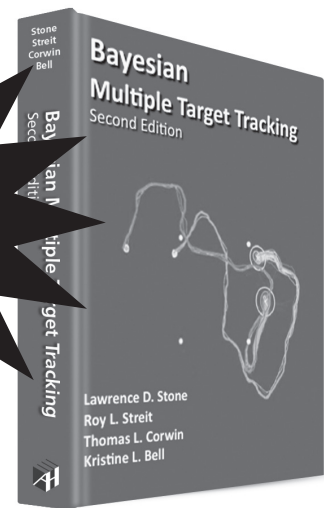
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Bayesian Multiple Target Tracking, Second Edition

Lawrence D. Stone, Roy Streit,
Thomas Corwin, and Kristine Bell



This second edition has undergone substantial revision from the 1999 first edition, recognizing that a lot has changed in the multiple target tracking field. One of the most dramatic changes is in the widespread use of particle filters to implement nonlinear, non-Gaussian Bayesian trackers.

This book views multiple target tracking as a Bayesian inference problem. Within this framework it develops the theory of single target tracking, multiple target tracking, and likelihood ratio detection and tracking. In addition to providing you with a detailed description of a basic particle filter that implements the Bayesian single target recursion, this resource provides numerous examples that involve the use of particle filters. With these examples illustrating the developed concepts, algorithms, and approaches, the book

helps you develop tracking solutions when observations are non-linear functions of target state, when the target state distributions or measurement error distributions are not Gaussian, in low data rate and low signal to noise ratio situations, and when notions of contact and association are merged or unresolved among more than one target.

Contents: Tracking Problems; Bayesian Inference and Likelihood Functions; Single Target Tracking; Classical Multiple Target Tracking; Multitarget Intensity Filters; Multiple Target Tracking with Tracker Generated Measurements; Likelihood Ratio Detection and Tracking

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