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5.1. Introduction5.2. Processing information in fusion; 5.3. Numerical representations of imperfect knowledge; 5.4. Symbolic representation of imperfect knowledge; 5.5. Knowledge-based systems; 5.6. Reasoning modes and inference; 5.7. Bibliography; Chapter 6. Probabilistic and Statistical Methods; 6.1. Introduction and general concepts; 6.2. Information measurements; 6.3. Modeling and estimation; 6.4. Combination in a Bayesian framework; 6.5. Combination as an estimation problem; 6.6. Decision; 6.7. Other methods in detection; 6.8. An example of Bayesian fusion in satellite imagery
6.9. Probabilistic fusion methods applied to target motion analysis6. 9.1. General presentation; 6.9.2. Multi-platform target motion analysis; 6.9.3. Target motion analysis by fusion of active and passive measurements; 6.9.4. Detection of a moving target in a network of sensors; 6.10. Discussion; 6.11. Bibliography; Chapter 7. Belief Function Theory; 7.1. General concept and philosophy of the theory; 7.2. Modeling; 7.3. Estimation of mass functions; 7.3.1. Modification of probabilistic models; 7.3.2. Modification of distance models
7.3.3. A priori information on composite focal elements (disjunctions)

Sommario/riassunto

The area of information fusion has grown considerably during the last few years, leading to a rapid and impressive evolution. In such fast-moving times, it is important to take stock of the changes that have occurred. As such, this books offers an overview of the general principles and specificities of information fusion in signal and image processing, as well as covering the main numerical methods (probabilistic approaches, fuzzy sets and possibility theory and belief functions).