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基于贝叶斯理论的一种接力跟踪方法

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A Method of Relay of Tracking Based on Bayesian Theory

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摘要 为了能够利用目标运动信息的先验知识以提高系统的检测和跟踪性能，该文将基于贝叶斯理论的检测跟踪联合处理方法应用于接力跟踪系统中。该方法在贝叶斯理论框架下能够利用系统已经获得的目标运动信息的先验知识，从而提高系统的性能。另外，考虑到计算复杂度，该文给出了一种简化的实现方法多点贝叶斯检测跟踪联合处理方法。该简化方法能够利用基于贝叶斯理论的检测跟踪联合处理方法的优点，同时可以按照系统的计算能力确定并行搜索的点数，以控制系统的计算复杂度。计算机仿真实验表明，在接力跟踪系统中应用基于贝叶斯理论的检测跟踪联合处理方法能够改善系统的检测和跟踪性能。

关键词： 目标检测和跟踪 接力跟踪 贝叶斯理论

Abstract： In order to make use of a prior information about target motion state, this paper applies coupling of detection and tracking based on Bayesian theory to the process of relay of tracking, which can enhance the performance of target detection and tracking for the system of relay of tracking. In addition, this paper presents a simplified version to reduce the complexity of computation of the system. The simplified version can take advantage of the characteristic of coupling of detection and tracking based on Bayesian theory, and can determine the number of tracking points according to the ability of computation of the system. The simulation results show that the performance of the system of relay of tracking can be improved by coupling of detection and tracking based on Bayesian theory.

Keywords： Target detection and tracking Relay of tracking Bayesian theory

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