

图形、图像、模式识别

## 实时视频中的车辆运动轨迹的提取和聚类

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**摘要** 利用运动物体轨迹的方向性、运动性和相互关系等典型特征对物体的运动轨迹进行聚类。首先利用改进的加权矢量Hausdorff距离作为度量运动物体轨迹相似度的方法, 从而使之适用于空间距离有差别的运动物体轨迹的谱聚类问题; 然后基于等周分割(ISO)算法, 构造轨迹相似度矩阵, 完成轨迹的粗聚类; 最后利用轨迹的方向性特征和轨迹类间距对轨迹进行二次聚类, 得到最终的轨迹聚类结果。

**关键词** [轨迹聚类](#) [Hausdorff距离](#) [加权矢量](#) [相似性度量](#) [等周分割](#)

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## Extraction and clustering of vehicle's trajectories from live video

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### Abstract

The clustering of the motion trajectories of moving objects is done by using the typical properties, such as direction, motility and relationship. Firstly, a kind of method named weighted vector Hausdorff distance is proposed to measure trajectories similarity. It can be applied in spectral clustering problems that emphasize spatial distinctions among trajectories of moving objects. Secondly, a trajectories similarity matrix is constructed based on ISO algorithm and cluster trajectories is implemented roughly. At last, the twice cluster process is performed by using the direction property of moving objects and the distance among clusters, and thus the final result of trajectories cluster is gotten.

**Key words** [trajectories cluster](#) [Hausdorff distance](#) [weighed vector](#) [similarity measure](#) [isoperimetric](#)

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