

图形、图像、模式识别

## 结合对称差分法和背景减法的目标检测方法

赵冠华<sup>1</sup>, 冯晓毅<sup>1</sup>, 王虎<sup>1</sup>, 骆艳卜<sup>2</sup>

1.西北工业大学 电子信息学院, 西安 710072

2.空军工程大学 电讯工程学院, 西安 710077

收稿日期 2008-7-28 修回日期 2008-10-20 网络版发布日期 2010-1-28 接受日期

**摘要** 针对帧差法易产生空洞以及背景减法不能检测出与背景灰度接近的目标的问题, 提出了一种将对称差分法和背景减法相结合的运动目标检测算法。首先利用对称差分法和背景减法分别得到两种差分图像, 并用OTSU分割法(天津法)得到合适的阈值将这两种差分图像二值化, 然后将得到的两种二值化图像进行或运算, 最后利用图像形态学滤波得到准确的运动目标。

**关键词** [对称差分法](#) [背景减法](#) [天津法](#)

**分类号** [TP391.41](#)

## Method of motion detection based on symmetrical differencing and background subtraction

ZHAO Guan-hua<sup>1</sup>, FENG Xiao-yi<sup>1</sup>, WANG Hu<sup>1</sup>, LUO Yan-bo<sup>2</sup>

1.Electronic Information College, Northwest Poly-technical University, Xi'an 710072, China

2.Institute of Telecommunication Engineering, Air Force Engineering University, Xi'an 710077, China

### Abstract

Considering disadvantages of that frame differencing produces the empty hole easily and background subtraction can't detect the object whose gray level is close to the background's, a method of motion detection combining symmetrical differencing and background subtraction is proposed. First, two different difference images with symmetrical differencing and background subtraction are gained respectively and two binary images can be gained by the appropriate threshold which comes from the method of OTSU. Then, the precise moving object can be extracted by applying OR operator between the two binary images. Finally, the precise moving object will be gained by morphological filter.

**Key words** [symmetrical differencing](#) [background subtraction](#) [OTSU's method](#)

DOI: 10.3778/j.issn.1002-8331.2010.03.044

通讯作者 赵冠华 [abandanstupid.student@sina.com](mailto:abandanstupid.student@sina.com)

### 扩展功能

#### 本文信息

▶ [Supporting info](#)

▶ [PDF\(668KB\)](#)

▶ [\[HTML全文\]\(0KB\)](#)

▶ [参考文献](#)

#### 服务与反馈

▶ [把本文推荐给朋友](#)

▶ [加入我的书架](#)

▶ [加入引用管理器](#)

▶ [复制索引](#)

▶ [Email Alert](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

#### 相关信息

▶ [本刊中 包含“对称差分法”的  
相关文章](#)

▶ [本文作者相关文章](#)

· [赵冠华](#)

· [冯晓毅](#)

· [王虎](#)

· [骆艳卜](#)