

## 基于局部锐度特征的无参模糊图像质量评估算法研究

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**摘要:** 为了有效评估模糊图像的质量, 在图像局部锐度特征的基础上, 提出一种基于局部锐度特征和双树复小波相结合的无参图像的质量评估算法. 该算法首先对评估图像进行多层双树复小波分解, 进而重构 6 个不同方向的图像, 接着计算每个方向图的局部锐度特征, 最后通过加权线性融合得到评估图像的锐度值. 通过在 4 个公共的图像评估数据集验证, 结果表明所提出评估方法在模糊图像评估中优于其他 6 种传统的图像质量评估方法, 同时也证明了评估结果更接近人的主观视觉特性.

**关键词:** 双树复小波; 图像模糊; 图像质量评估; 图像锐度; 局部相位一致性

## No-reference Blur Image Assessment Based on Local Sharpness

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**Abstract:** In order to effectively assess the quality of the image, the paper proposes a novel assessment method without the reference image that effectively combines the dual tree complex wavelet transform with the local sharpness of the image on the basis of the local sharpness of the image. Firstly, the image is decomposed multilayers by the dual tree complex wavelet and 6 different directions of the image are reconstructed, then the local sharpness of each direction is computed. Finally, the final local sharpness is computed by the linearly fusion with the weight. In 4 publicly available image databases, experimental results show that the proposed method is superior to other 6 kinds of the state-of-the-art methods in the blur images from the above databases and testify that the proposed method is closer to the human vision.

**Key words:** dual complex wavelet; image blur; image quality assessment; image sharpness; local phase congruency

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