APERS: Affine Parameters Estimation by Random Sampling

A robust tie-points detection algorithm

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The APERS algorithm is based on the following steps:

1. **Feature Detection**: Detect interest points in both images.
2. **Feature Matching**: Match the interest points using a feature descriptor, such as SIFT.
3. **Robust Tie-points Detection**: Determine which matches are reliable.
4. **Outliers Rejection**: Remove outliers that do not fit the affine model.
5. **Parameter Estimation**: Estimate the affine parameters using the remaining matches.

**Theoretical results**

- **Proportion of identified inliers**
- **Proportion of retained outliers**

**Application to remote sensing imagery**

- **Robust tie-points detection**: The algorithm successfully identifies inliers and outliers even in the presence of noise.
- **Parameter estimation**: The estimated affine parameters are accurate and robust to outliers.

**References**


The authors acknowledge the Gordon and Betty Moore Foundation for their support on this project.