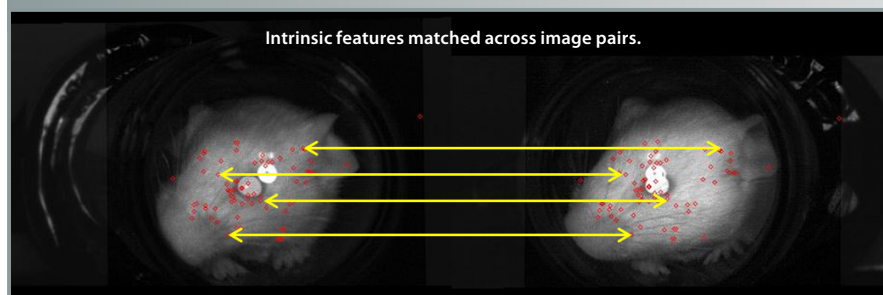


# Intrinsic Feature-Based Pose Measurement for Medical Imaging Motion Compensation

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## Technology Summary

Tomographic imaging of awake, unrestrained animals or humans during a scan can result in blurring and unusable 3D images due to movement by the subject. This invention measures and tracks the motion of an awake subject during a medical imaging scan using only the natural appearance of that subject.

Tracking is done without using extrinsic markers, fiducials, or other added features. Optical images are acquired from two or more cameras with infrared or visible wavelength illumination. These images are processed to extract intrinsic, natural features, calculate 3D locations, track features in time, and determine relative position and orientation from one image frame to the next frame. The 3D position and orientation changes over time are measured and used to compensate the reconstructed 3D image.

## Advantages

- Improved quality of medical imaging scans
- No preparation time needed for marker attachment
- High accuracy measurements with no effect on scan time

## Potential Applications

- Preclinical and clinical PET
- SPECT imaging
- MRI and CT imaging

## Patents

Application in preparation.

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