NAVIGATION SYSTEM FOR BRONCHOFIBEROSCOPIC PROCEDURES BASED ON IMAGE REGISTRATION WITH SCALE ADAPTIVE IMAGE SIMILARITY MEASURE (TueAmPO3)

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Abstract :

Navigation system for ronchofiberoscopic procedures establishes the location of the tip of the endoscope through the registration of two images: the real image from endoscope camera and the virtual bronchoscopy image obtained in real−time from computer tomography data. Because of the difference between images modality multiscale image registration algorithm with appropriate choice of similarity measure at each level of registration algorithm is proposed. The motivation for such an approach is observation that at a lowest resolution level difference between images modality (resulting in difference in images appearance) have much less impact on similarity measure value than mismatch in virtual and real camera position. Presented method is robust to local minima, guarantee faster convergence and enables real−time implementation.

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