

Brief CV

*此表请提供中英翻译

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Gender	Male	Title (Pro./Dr.)	Dr.	
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Research Area	Image processing, artificial intelligence and optical design			
<p>Brief introduction of your research experience: Feng Wu is an associate professor in Changzhou Institute of Technology. He has completed National Natural Science Foundation of China (No. 61640420), Natural Foundation of Colleges and Universities in Jiangsu Province (No.12KJD460001), and Changzhou Project of International Science & Technology Cooperation Plan (No.CZ20110016). Now he is the director of Changzhou Key Laboratory of Applied Technology on Intelligence & Unmanned Aerial Vehicle. His research interests are in digital image processing, artificial intelligence and optical design. Now he is mainly studying on technologies about the star sensors, and the single remote sensing image processing. Over twenty academic papers were published. Among them, 13 papers were indexed by EI Compendex or SCI.</p>				
报告题目及摘要/ Title & Abstract *				
报告题目/Title:	<p>基于星座的全天时星敏感器导航星优选算法 Guide star optimal selection algorithm for all-time star sensors based on star constellations</p>			

摘要/ Abstract:

全天时星敏传感器通过观测恒星，能在白天和黑夜为近地面飞行器提供精确的导航信息，成为现代星敏传感器的一个重要发展方向。全天时星敏传感器根据携带的导航星星库，通过识别视场内红外波段的观测星输出精确的姿态。通常，为了提高星图识别的性能，导航星应在全天球分布均匀。本文提出了一种优选导航星算法，获得均匀分布的导航星。讨论了星座特征，提出了根据在惯性坐标系中恒星的位置，使用星对角距将局部视场内的恒星分配到不同星座的思想，开发了基于星座的优选导航星算法。详细介绍了其实现过程。使用 2MASS 星表为原始星数据，在 J 波段开展了导航星优选实验。结果表明所提出的算法具有计算简单，易于实现的优点。所得导航星星库的波尔茨曼熵降低了 2 个数量级，提出的算法优越于回归选取算法和星等加权算法。

All-time star sensor provides accuracy navigation information to air vehicles near the ground all day and all night by observing stars. It is an important developing direction of modern star sensors. All-time star sensors output accurate attitudes by identifying the observed stars in the infrared band in the field of view according to the loaded guide star catalog. Guide stars are usually required to distribute uniformly on the celestial sphere to improve the performance of the star pattern identification. An optimal selection algorithm is proposed to achieve an even distribution of guide stars in this paper. Constellation features are discussed. The idea that distributes stars in the local field of view to constellations is proposed by using the star pair angular separations according to the star positions in the inertial coordinate system. The optimal selection algorithm of guide stars based on star constellations is developed. Its detailed implement procedures are introduced completely. The guide star optimal selection experiment in J band by using 2MASS star catalog as the original star data is implemented. It proves that the proposed algorithm has the virtue of simple calculation and easy realization. The Boltzmann entropy of the obtained guide star catalog drops more than 2 orders of magnitude. The proposed algorithm is superior to the regression selection algorithm and the magnitude weighted method.

*****All the columns need to be filled in.