

理论研究

机械结构因素对光电跟踪伺服系统性能的影响

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摘要

为克服机械结构因素对光电跟踪伺服系统性能的不良影响,分析了转动惯量、结构谐振频率、摩擦力矩等伺服机械结构因素与伺服系统性能的关系,包括分析转动惯量与伺服系统性能的关系、结构谐振频率与伺服系统性能的关系、摩擦力矩与伺服系统性能的关系,探讨了消除或减小机械谐振的措施.该分析方法可应用于设计和制造响应速度快、跟踪精度高的光电跟踪伺服系统.

关键词 [光电跟踪设备](#) [伺服系统](#) [转动惯量](#) [机械谐振](#) [摩擦力矩](#) [谐振频率](#) [伺服带宽](#)

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Mechanism Structure Factors on Performance of Opto-electronic Tracker Servo Systems

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Abstract

By way of overcoming mechanism structure factors seriously affecting on performance of opto-electronic tracker servo systems, the relationship between servo system performance and servo mechanism structure factors that consist of inertia moment, structure resonance frequency and friction moment is analyzed. These include relations between inertia moment and servo system performance, between structure resonance frequency and servo system performance, and between friction moment and servo system performance. The measures that avoid or minimize the mechanism resonance are probed. These analytical methods may be used to design and make the opto-electronic tracker servo systems with quick response and high tracking accuracy.

Key words [opto-electronic tracker](#) [servo system](#) [inertia moment](#) [mechanism resonance](#) [friction moment](#) [resonance frequency](#) [servo bandwidth](#)

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