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舰载飞机着舰拦阻动力学研究综述

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Overview of Carrier-based Aircraft Arrested Deck-landing Dynamics

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摘要 参考文献 相关文章

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摘要

拦阻着舰过程通常被认为是舰载飞机事故率最高的阶段，因此，自从有了航空母舰和舰载飞机，拦阻着舰动力学就一直是国内外相关研究人员研究热点。本文从拦阻钩、拦阻装置和起落架3个关键部件着手，比较详细地论述了舰载飞机着舰拦阻涉及到的关键动力学问题及其研究现状重点对拦阻钩弹跳动力学及其载荷分析、拦阻索动力学及其载荷分析、下沉速度、非对称拦阻对起落架载荷的影响、拦阻系统动力学等方面进了综述。最后，对着舰拦阻动力学研究的发展趋势进行了展望。

关键词： 舰载飞机 拦阻钩 拦阻装置 起落架 动力学 载荷 系统分析

Abstract:

The arrested landing process of carrier-based aircraft is generally considered to be a period when accidents occur mos frequently. Therefore, arrested deck-landing dynamics has been one of the focuses of research both at home and abroad ever since the appearance of aircraft carriers and carrier-based aircraft. The key problems and the research status of carrier-based aircraft arresting systems are discussed in detail from the three important aspects: the arresti hook, arresting devices and landing gear. The emphasis is placed on an analysis of the hook bounce dynamics, cable dynamics and the arresting system dynamics as well as the load of the arresting hook and arresting cable, the influen of the sinking velocity and the asymmetric arresting on the landing gear. In addition, prospects in future arrested decl landing dynamics research are proposed.

Keywords: carrier-based aircraft hook arresting device landing gear dynamics load systems analysis

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