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考虑多种影响因素下的改进重装空投系统建模

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摘要:

针对当前重装空投数学模型与实际系统存在偏差的问题, 放宽建模假设, 提出了牵引伞力作用方向, 建立了涵盖刚体货物、舱内地板角、牵引伞等影响因素的空投数学响应模型。针对建模过程的复杂性, 改进了传统分离体法建模方法, 简化了建模过程, 提高了模型的扩展性。最后, 通过与现有重装空投模型的理论分析与仿真对比, 证明了该模型具有较小的建模误差, 更贴近于实际重装空投系统。

关键词:

Improved heavy weight airdrop model considering many influence factors

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Abstract:

In view of the difference between the present heavy weight airdrop mathematical model and the real system, the model assumption is relaxed and the parachute force direction is presented. The improved heavy weight airdrop model is established which covers many influence factors including rigid body good, angle of cabin floor and parachute. Due to the complexity of the modeling process, the separation body method is improved, which simplifies the modeling process and improves the model extensibility. The model is proved that it has smaller modeling errors and is more realistic compared with the present mathematical model by the simulation result.

Keywords: heavy weight airdrop system dynamics model dynamic response

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