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考虑各种随机干扰源有控炸弹攻击区 及弹道仿真研究

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Title: Attack Zone and Trajectory Simulation of Guided - bomb Considering Many Kinds of Stochastic Interference Source

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关键词: [有控炸弹](#); [随机干扰源](#); [可攻击区](#); [风场](#)

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摘要: 文中基于有控炸弹气动力特性与动力学模型、制导律与控制系统的飞行仿真模型,以及各种随机干扰源模型等,在不同的释放条件下,通过各种随机干扰源的不同组合,计算了大量的可攻击区。利用C++与 Matlab飞行仿真软件,较为直观地比较了各种随机干扰源情况下的有控炸弹可攻击区及相应的6D飞行轨迹。大量的数据表明随机干扰源中风场对有控炸弹的可攻击区的形状及大小影响较大,改变了该弹的可攻击区的形状及大小。因此,风场是影响有控炸弹命中率与可攻击区的重要因素。

Abstract: Based on flight simulation model of guided - bomb (including differential dynamic equations and missile guidance law) and stochastic interference source models, attack zones (AZ) of the guided - bomb were calculated considering a great deal of combination of release conditions and stochastic interference source. The attack zones (and their 6 - D flight trajectories) of guided - bomb in stochastic interference source status were compared. The results show that the wind field, one of stochastic interference sources, changes AZ shape and size. So wind field is an important factor that affects guided - bomb to hit the target. It possesses reference value and practical engineering value in real application. During calculation and simulation, both C++ and Matlab software were employed.

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