

基于攻防博弈的多波次导弹发射路径规划研究

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摘 要: 针对多波次导弹发射路径规划问题, 基于不完全信息博弈理论, 建立了多波次导弹发射路径规划的目标优化模型, 综合考虑了路网节点的攻防博弈、整体暴露时间、单车最大暴露时间和路线的分散机动等方面。基于 Floyd 最短路径算法, 引进启发式搜索策略, 实现了模型的实例验证求解, 研究结果对于实际中导弹发射路径规划具有很大的参考价值。

关键词: 纳什均衡; Floyd 算法; 启发式搜索; 路径规划

Research on Multi-Shot Missile Launching Path Planning Based on Attack-Defense Game

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Abstract: In the basis of incomplete information game theory, this paper establishes a target optimization model for multi-shot missile launching path planning. In this model, the attack-defense game of road network nodes, overall exposure time, maximum exposure time of single vehicle and decentralized maneuver of the route are considered comprehensively. Based on Floyd shortest path algorithm and through heuristic search strategy, the model is verified and solved. The research results have a strong reference significance for missile launching path planning in practice.

Key words: Nash Equilibrium; Floyd Algorithm; Heuristic Search; Path Planning

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