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姿控脉冲发动机点火逻辑研究(PDF)

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Title: The Research on Fire Logic of Attitude Control Pulse Engine

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摘要: 姿控脉冲发动机数量有限，为最大发挥脉冲的效用，减小喷流对弹体稳定性的影响，选择合适的点火时刻和点火逻辑是控制系统研究的关键。文中以PAC-3的弹体布局为例，分析讨论姿控脉冲发动机的工作特性和点火条件，基于侧向直接力与力矩的矢量叠加，利用Matlab仿真技术综合出弹体脉冲发动机的点火逻辑。仿真在纵向平面进行，给出了脉冲发动机点火个数、产生的直接力和力矩，以及导弹与目标的运动轨迹图，其结果有力地说明了直接力的效用和点火逻辑的正确性

Abstract: The number of attitude control pulse engine is small For making full use of pulse, reducing the effect of jet on projectile, appropriate ignition time and ignition logic is the key for control system research Take the PAC 3 missile layout as an example, the attitude control pulse engine's operational factor and fire condition were analyzed, based on superposition of the lateral force and torque , the pulse engine's fire logic was synthesized using Matlab simulation The simulation was carried on the vertical plane, the number of the pulse engine which producing direct force and the torque, as well as the trajectory diagram of missile and target were given The result proved the direct force effectiveness and fire logic accuracy

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备注/Memo: 收稿日期：2010-06-02 作者简介：展建超（1981- ），男，陕西户县人，讲师，硕士，研究方向：航弹管理、导弹制导与控制

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