

Ratchani Yuenyaw 2011: Guidance Studies for Multiple Launch Rocket System.  
Master of Engineering (Aerospace Engineering), Major Field: Aerospace Engineering,  
Department of Aerospace Engineering. Thesis Advisor: Assistant Professor  
Group Captain Pahron Sanguanbhokai, Ph.D. 62 pages.

Increasing the precision and accuracy for the rockets will provide greater lethality and effectiveness. To achieve a controlled trajectory of the rocket from the initial launch to its target need the rocket guidance section. In this study, describes guidance system studies for multiple launch rocket system (MLRS), ground to ground munitions that fired from launcher tubes to the target with ballistic trajectory. This guidance problem is the portion of constrained optimization.

The solution of the rocket guidance problem in this research was assigned to be received GPS navigation updates and commenced during the initial phase of flight from the motor burnout up to the time of apogee that account for significant parameter is launch-induced offsets from nominal at burnout state. Dynamic programming method is applied to correct the ballistic trajectory by generating a set of feedback gains for guided portion to compensate that launch offsets. Dynamic programming method validation is obtained by comparison of the controlled ballistic trajectory with the nominal trajectory and also analyzed the target miss distance with respect to the different launch offsets. Results from studies will retrofit of existing domestic unguided rocket as a few internal hardware actuator add-ons that become to the guided rocket.

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