

## **Exo-Atmospheric Thrust Vector Interception: Translation Only**

In exo-atmospheric interception, steering jets is the only possible method to move a vehicle. A non-linear vector guidance law based on a saddle-point inequality with respect to miss-distance as well as capture time is presented and analyzed for both ideal and non-ideal interceptor. Time-to-go is found to be a quartic polynomial equation, and an algebraic "first-pass" capture zone is presented. In order to eliminate the non minimum-phase property of the standard Thrust Vector Control (TVC), the paper proposes a translation without rotation interceptor configuration.