

Applying Aeropropcapture at Titan and the Ice Giants

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- Aeropropcapture (APC) is similar to aerocapture, but uses thrust instead of lift as its control force during the atmospheric pass
- At lower entry velocities and for $T/W = L/D$, APC has a greater theoretical corridor width than aerocapture, thus having more control
- ΔV for chemical propulsion becomes much larger than APC for increasing V_∞

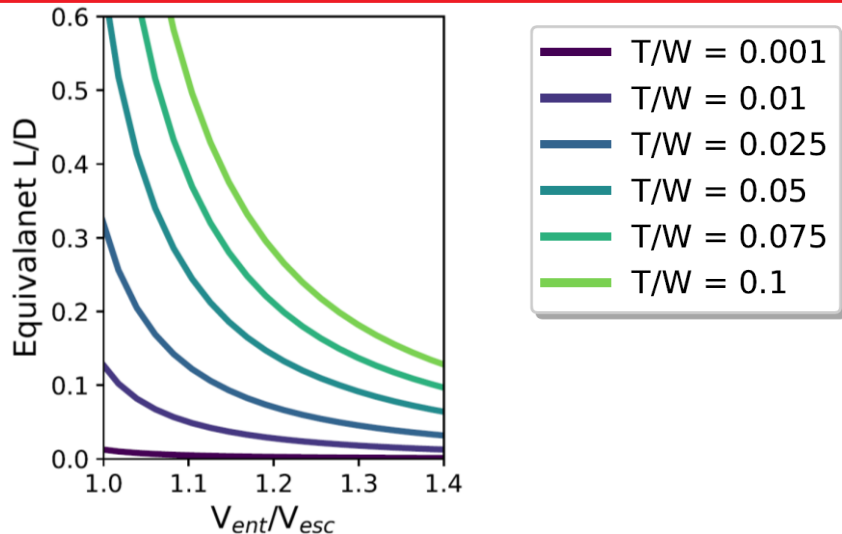


Figure 1: Equivalent L/D for various T/W over a range of entry velocities. Here the ballistic coefficient is 200 kg/m^2 , post-capture apoapsis is $5r_{pl}$, and the planet is Neptune.

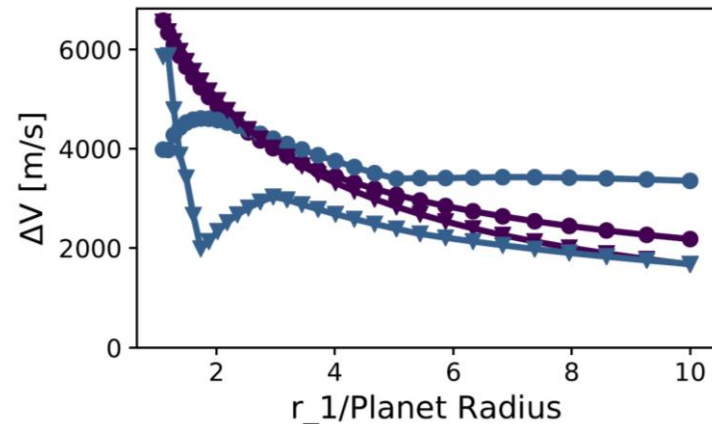


Figure 2: ΔV requirements for APC and chemical propulsion. Here the ballistic coefficient is 200 kg/m^2 , T/W is 0.05, V_∞ is 0 m/s, and the planet is Neptune.

