Design Considerations of Rocket Motor

1. Maximum Pressure for a given temperature (factor of safety around 2)
2. Weight of entire rocket
3. Geometry of rocket motor
4. Thrust of rocket motor
5. Altitude

Varied values in Rocket Propulsion Analysis

* Steady State O/F Ratio
* Steady State Chamber Pressure
* Areachamber/Areathroat
* Areaexit/Areathroat

Returned Values in Rocket Propulsion Analysis (highlight means used in Matlab Sim)

* Steady State Temperature
* Characteristic Velocity
* Specific Impulse
* Specific Impulse (in vacuum)
* Thrust Coefficient
* Thrust Coefficient (in vacuum)
* C.factor (I don’t know what this is)

Varied values in Matlab Sim

* Inner Diameter of Grain
* Outer Diameter of Grain
* Use alternative grain cross-sections (if you’re feeling crazy)
* Total mass of rocket without grain
* Geometry of Rocket (enough to calculate drag)
* Volume of N2O tank (from standard sizes)
* Pressure of N2O tank (also standard)
* Diameter of Feed Line (also standard)

Returned Values of Matlab Sim

* Altitude
* If chamber failure has occurred
* Time to empty N2O tank
* % Fuel left over