

Thermosphere Tutorial Questions

How would you simulate the next 2-3 solar cycles in view of the predictability (or lack of) of solar cycles?

What are the advantages of measurements of solar activity in space? And the disadvantages?

Over a satellite mission, its mass often decreases (why?). How does that change the atmospheric drag?

What can you do if you want to minimize atmospheric drag of a future satellite mission? (give solutions for a circular orbit, and for a highly eccentric orbit)

**What can you do if you want to maximize drag? Why would you want to do that?
(give solutions for a circular orbit, and for a highly eccentric orbit)**

Why do the lighter atmospheric constituents become more and more abundant with altitude in the thermosphere?

BONUS TASK (requires good internet and CCMC):

Simulate the minimum-to-maximum predicted density with the model NRLMSISE-00 for the same conditions as on slide 7 ([DTM2013 250 km 7/6/2002 F=181](#))

Simulate density at 800 km, latitude vs local solar time, for low and very high solar activity. What strikes you?