



SPACE PHYSICS

R7017R

SPENVIS Laboratory Experiment 1

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1 Assignment

1.1 Overview

1.2 Results

Data was downloaded from <http://sidc.be/silso/datafiles> and ftp://ftp.ngdc.noaa.gov/STP/GEOMAGNETIC_DATA/INDICES/KP_AP, year 2003, and the data format was checked.

1.3 Discussion

2 Assignment

2.1 Overview

2.2 Results

For the default case, the number density is much lower at higher altitudes than it is for the corrected value, for example: at an altitude of approx. 500km the number density is around $10^{5.05}$, whereas for the latter case the number density at 500km is approx. $10^{5.2}$. **insert the images here**

2.3 Discussion

3 Assignment

3.1 Overview

3.2 Results

for 2003 SD:7.1 average sunspot number 99.3

Selecting Day 1



The sunspot number parameter has almost no effect at lower altitudes, however at approx. 250km the electron number density starts to vary. The lower the sunspot number the lower the electron number density at each respective altitude above 250km.

2. The electron number density varies on a diurnal basis, but only very minutely.
3. Comparing Winter and Summer (day 1 and day 181), the electron number density varies on a larger scale.

insert
plot
here
km/e-

3.3 Discussion

4 Assignment

4.1 Overview

4.2 Results

Since the given latitude and longitude are located in the auroral region, and 2003 was close to a maximum of the sun's 11-year cycle, the IRI2001 Model is not suitable as this is not magnetically-quiet region.

4.3 Discussion

5 Assignment

5.1 Overview

5.2 Results

D-Layer below 90

E 90-130

F1-130

todo

5.3 Discussion

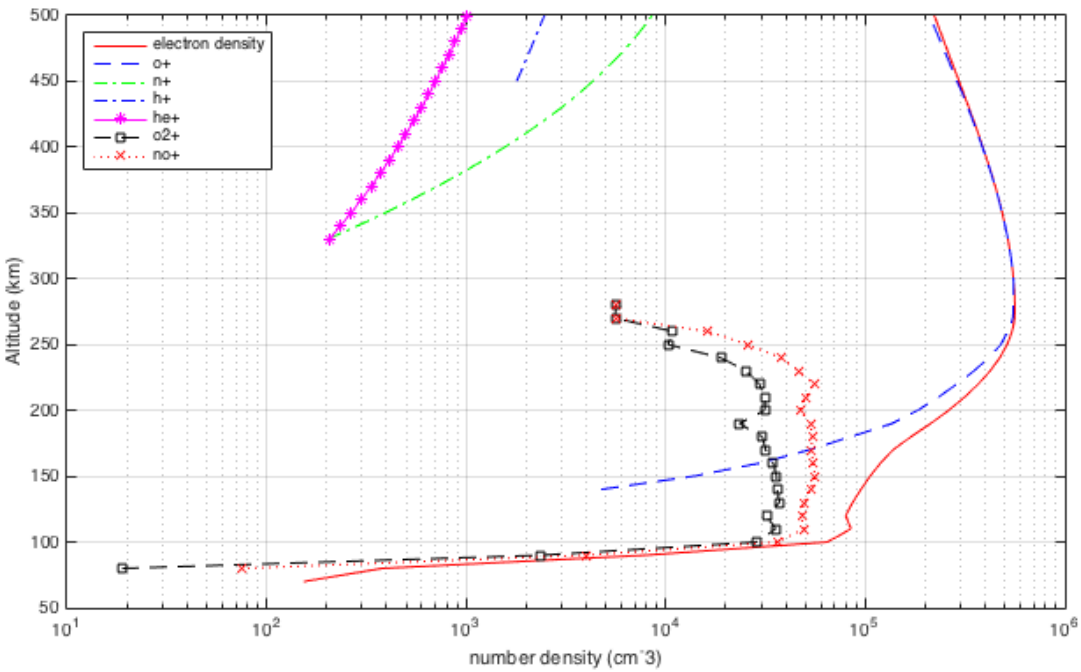


Figure 1: bla