Home Work #2

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1   Question 1

Spacecraft position in ITRF coordinates is given by

$$\mathbf{r} = \begin{bmatrix} 6789 & 6893 & 7035 \end{bmatrix}^{\mathrm{T}}_{km}$$

1.1   part a

Find Latitude and Longitude. For this purpose used algorithm 12 of Valado's book. This algorithm is implemented in the function 'latlon.py' in the 'code/Q1' folder. The function takes the spacecraft position vector as input and returns the latitude and longitude in degrees. The iteration ended when the difference is smaller than 1e-10. The results are:

Table 1: Results of part a

Variables	Values
Latitude	36.12°
Longitude	45.43°
h_{ellp}	5591.51_{km}

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