10/11/15

The file *Satpos.dat* contains the WGS84 coordinates of all satellites in units of km for a 15 minutes time-sampling. Two observers with the WGS coordinates $\mathbf{x_1} = (\mathbf{4.159425301753478 \cdot 10^6, 672934.917, 4.772423756493888 \cdot 10^6})$ and $\mathbf{x_2} = (\mathbf{4.159404458308991 \cdot 10^6, 672972.065, 4.77245255894603 \cdot 10^6})$. receive the pseudo ranges on the freuency $f1 = 1575.42 MHz$.
The pseudo ranges are contained in the files *PR.dat*,*PR1.dat*.
The VTEC at the observers locations is VTEC=86 TECU.

Compute the ionospheric range error for both observers.

Subject: POLAR

%% Load satellite orbits.

```
orbits = load('      .dat')
```

%%% visualization

```
idx17 = find(orb(:,1)==17);
orb17 = orbits(idx17);
plot3(orb17(:,2), orb17(:,3), orb(:,4));
```

%%% visibility

```
obs1 = [      ;      ;      ]
obs2 = [      ;      ;      ]
relvec = orbits(:,2:4) - repmat('orbs1', [96*32, 1]);
norm_relvec = sqrt(dot(relvec, relvec));
relvec_n = relvec ./ norm_relvec;
```