Subject: Re: Orbit calculations from TLE
Posted by lecacheux.alain on Fri, 27 May 2016 20:19:53 GMT
View Forum Message <> Reply to Message

Le jeudi 26 mai 2016 16:39:22 UTC+2, nata a écrit :
> Hi all,
>
> Does anybody have a routine to compute a satellite orbit from the Two-line element set (TLE) ?
>
> It would be amazing to have something like http://pyorbital.readthedocs.io/en/latest/ under IDL
>
> Thank you in advance for your help,
> nata

I think you would have two possibilities:

1) do the entire calculation by using IDL. That should not be too difficult, because a TLE text file is simply the list of the Keplerian elements of the osculatrice orbit (i.e. the simple, unperturbated one which is the closest to the true one within some (validity) time interval). This orbit is an ellipse along which the satellite moves according to the 2nd Kepler law (the "loi des aires" in French). I guess that the procedure would involve three steps: i) reference the ellipse plane within your working frame, ii) put the satellite at the right position (depending on time) on the ellipse, iii) back transform the calculated position into your working reference frame.

2) directly use the Python pyportal library through the IDL to Python bridge (needs IDL v8.3+)

The second way is appealing. Could you test it ?
alx.