

Subject: Test of Trajectory Generator on TMA

From: Te-Wei Tsai <ttsai@lsst.org>

Date: 12/1/22, 9:49 AM

To: Ismael Ruiz de Argandoña <ismael.ruiz@tekniker.es>

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Hi Ismael,

Russell helped to do some low tracking speed test on TMA to check the issue of oscillation (demanded position and velocity) still persists or not. I think the bug has been mostly fixed but with some "intermittent" side-effect I do not understand.

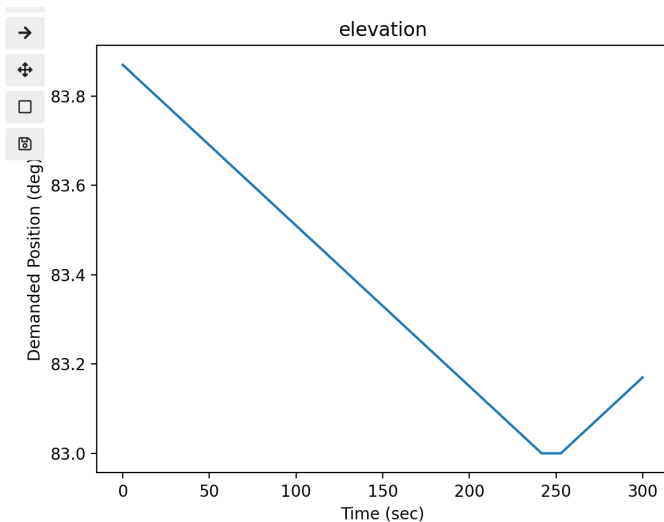
1. Tracking speed is 0.0036 deg/sec at az, el directions (timestamp: 1669851516.640)

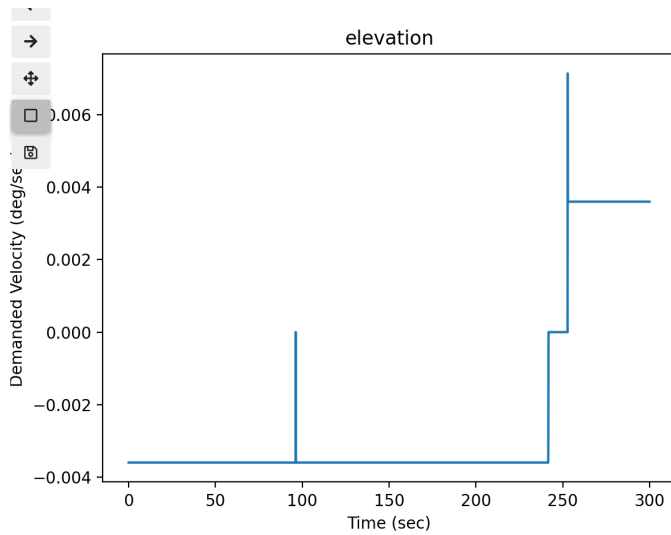
```
time = Time(1669851516.640, format='unix_tai', scale='tai')
time.format = 'fits'
print(time)
```

Last executed at 2022-12-01 09:00:32 in 3ms

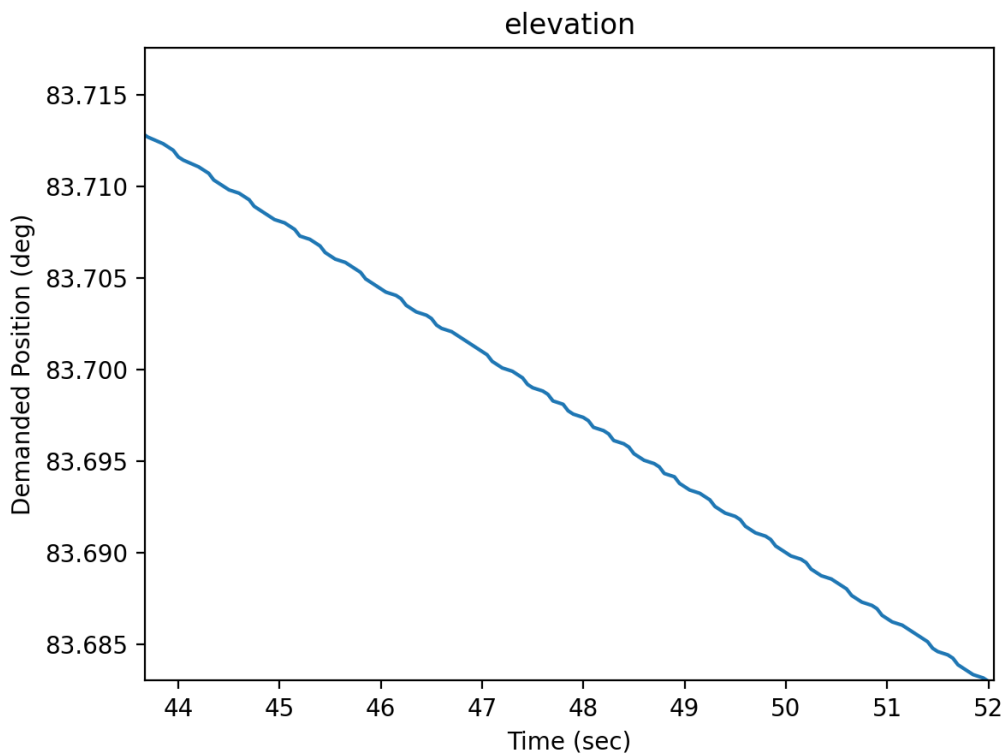
2022-11-30T23:38:36.640

Demanded position looks great but there are the spikes in the demanded velocity (I only show the el data but az is the same):



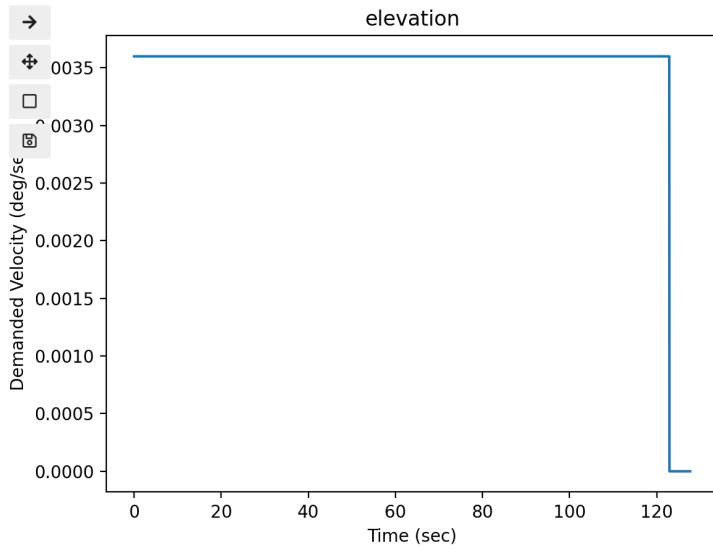


You can see the time=96sec and time=254sec at demanded velocity. If we check the demanded position at smaller range as the following:



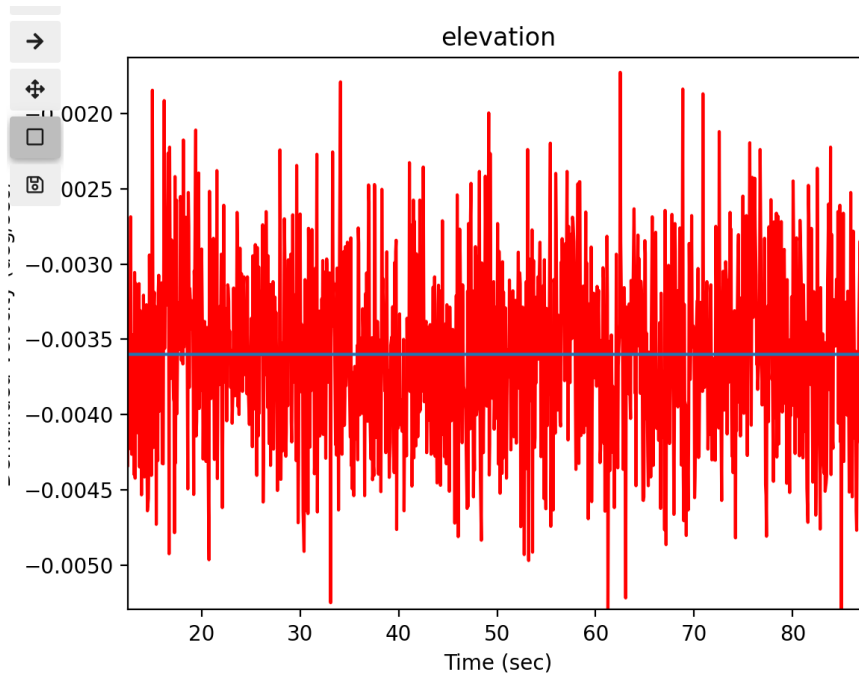
You could see some oscillation there. However, the related demanded velocity does not have this and keeps constant -0.0036 deg/sec. I am kind of confused with this.

2. Tracking speed is 0.0036 deg/sec at az, el directions (timestamp: 1669851805.426)



You could see there is no spike in demanded velocity here.

BTW, the actually velocity has some fluctuation in this process as the following (see the "red line"):



This fluctuation reflects to the actual position directly.

Thank you!

Te-Wei Tsai