

SPACE DEBRIS SYMPOSIUM (A6)
Measurements (1)

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SEARCH FOR SPACE DEBRIS IN THE MEO REGION WITH ZIMSMART

Abstract

Nowadays, the MEO region is mostly populated with satellites of the Global Navigation Satellite Systems NAVSTAR GPS and GLONASS. Satellites were launched since 1978 (GPS) and 1982 (GLONASS), respectively. Due to the replacement of old satellites and the deployment of new systems like Galileo and Compass the number of satellites will increase. As a consequence the number of space debris will also increase.

The search at the AIUB for space debris objects in the MEO region is performed with the small aperture telescope ZimSMART, located in Zimmerwald, 10km South of Bern (Switzerland). To minimise the processing steps the tracklets (a set of at least three observations belonging together) from the MEO surveys are analysed in the same processing pipeline as those from GEO surveys. MEO and GEO surveys are observed alternately during one night.

The surveys are performed by scanning the orbital planes of former as well as of active GNSS satellites. The survey strategy consists of tracking pseudo-objects with equidistant spacing in an orbital plane. So, a homogeneous coverage of the orbital plane is guaranteed.

We will present survey results of the investigated orbital planes. Between April 2011 and February 2012, orbital planes of seven satellites were observed: GIOVE-A, one MOLNIYA, two NAVSTAR GPS and three GLONASS.