

P. Lauber, M. Ploner, M. Prochaska, P. Schlatter, T. Schildknecht, A. Jaeggi

Trials and limits of automation: Experiences from the Zimmerwald well characterized and fully automated SLR-system

Requirements for the automation of an SLR system may stem from different applications. In Zimmerwald the main goals are in particular the automation of the routine ILRS observations, the Space Debris observations, the interleaved SLR and optical observations, as well as experimental measurements (e.g. time transfer, multistatic space debris observations, etc.). An overview will be provided on the different components related to automation, including the hardware, the hardware independent and hardware dependent software parts, and safety related issues. Different strategies of automation are shown for two of our measurements systems. Firstly for the ZIMLAT legacy SLR system which is by now 20 years old and requires replacement of old hardware and electronics components and porting of software onto new operating systems and computer hardware. Secondly we will present the development of a new measurement system, originally designed for space debris observation, based on completely new hardware (telescope and mount). This system is currently validated and its tracking performance for LEO objects is being optimized and characterized.