

Downlink communication experiments with OSIRISv1 laser terminal onboard Flying Laptop satellite at Grasse SLR/LLR station

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Downlink measurement campaigns from the optical downlink terminal OSIRISv1 onboard the LEO satellite Flying Laptop were carried out at Grasse SLR/LLR station (Observatoire de la Côte d'Azur) and with two Optical Ground Stations of the German Aerospace Center. On/off keyed data at 39 Mb/s were modulated on the laser signal, and according telecom reception was performed by the ground stations. The pointing of the laser terminal was achieved by openloop body pointing of the satellite orientation, with its star sensor as attitude control signal. We report here on the measurements and investigations of the downlink signal and the data transmission. We also present a detailed scintillation analysis using data acquired from atmospheric turbulence monitoring instrumentation from the CATS station.