

Altimetry and Transponder Ground Simulation Experiment

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We have designed and built a compact demonstrator unit for the investigation of altimetry and transponder applications. A small light-weight breadboard carries a compact frequency doubled Nd:YAG laser, a focal beam expansion optics, a small receiver telescope with spectral and spatial filter arrangement and a photosensitive detection device (SPCM, PMT or SPAD). The output laser energy can be as high as 45 mJ with a pulse-width of 3 ns and the telescope aperture is 12 cm. Simulations [Degnan 2006] suggest that the link margin for LEO satellites is comfortable and that it may be possible to obtain echoes from a dual-station experiment in several different configurations. This talk outlines details of the experimental setup.