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3.9 Analysis on Detection Capability for Space Debris Laser Ranging

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Satellite Laser ranging is one of the highest accurate measuring techniques in space geodetic surveying, and Debris Laser Ranging technique is a new development trend in the world. Based on the background of beginning phase on space debris laser ranging research, the paper theoretically analyzes the successful detection probability of the returns on detecting space debris with laser ranging, then analyzes the detection capability with different telescope aperture sizes, laser pulse energy, and repetition frequency on space debris detection. The research provides theoretical support for the future work on detecting space debris in this field.