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ABSTRACT

Debris laser ranging is highly interesting for collision avoidance as it has the potential to improve the uncertainties on the chaser object orbit, at a significantly lower price than radar measurements. This is especially the case for small debris objects, where the available orbit is of poor quality usually. With more laser ranging stations building up debris ranging capabilities, operational support for collision avoidance is getting in reach. It is the goal of this paper, to investigate on the current capabilities and readiness for this task.

High risk close approaches of ESA satellites since 2009 have been analyzed for the potential of debris laser ranging support. This takes into account current and planned stations with debris laser ranging capabilities and their limitations. Weak points are identified and improvements suggested.