Techniques of Identification and Evaluation of Spacecraft Approaches to Space Debris

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The article considers the problem of identifying and assessing the spacecraft encounters with space debris. The algorithm for pre-filtering objects known to be non-hazardous is proposed. Based on a number of analytical criteria, the algorithm can significantly reduce the computation time. An analysis of the possible location of the approach point relative to the line of intersection of the orbit planes is performed. The problem of assessing the hazard level of identified approach is discussed.

Keywords: *spacecraft, space debris, Catalogue of Space Objects, approach, approach identification, pre-filtering, assessment of encounters, hazardous approach, probability of collision.*

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