Aiming at reducing the huge amount of computation in separated modular spacecraft system optimization, in this paper, a new method for the separated spacecraft system optimization based on hierarchical structure is introduced. This method decomposes the system optimization problem to three hierarchies，the exterior cycle optimizes the number of modules and the height of orbit, the middle cycle optimizes the component configuration，and the interior cycle optimizes launch vehicles and batches. Middle cycle is nested in the exterior cycle, while the interior cycle is nested in the middle cycle. By this method, the computational cost is largely reduced. The effectiveness of this optimization method is verified in the case study of a virtual earth remote sensing separated modular spacecraft.
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一种针对分离模块航天器系统的分层优化方法

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An Optimization Method of Separated Modular Spacecraft Systems Based on Hierarchical Structure

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