Rope system designing for multi-link solar batteries disclosure under uncertainty

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Currently, not enough attention is paid to the flexible solar batteries disclosure systems. This paper deals with mathematical methods for designing a rope disclosure system. Under flexible system for disclosing the multi-link solar battery structure we mean such a construction that adopts all the restrictions at the performance stage, provided that the uncertain parameters may take any value from the uncertainty region. Uncertainty is the moment of resistance between the multi-link design links defined by friction in the joints and the harness resistance. The purpose of the system construction is to provide a consistent units fixation from the last link to the first. Basing on the proposed mathematical model we calculated additional angles rotation of the units, caused by the elastic ropes synchronization system. Due to impossibility of controlling the resistance moments the operating forces in the cables can be varied within certain limits. The research task is to determine the pretension cables synchronization system for ensuring the disclosure system performance conservation. To solve the problem, we use a method of approximating the outside.

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