

Rollet vs Rocket: A New in-Space Propulsion Concept

Authors : Arthur Baraov

Abstract : Nearly all rocket and spacecraft propulsion concepts in existence today can be linked one way or the other to one of the two ancient warfare devices: the gun and the sling. Chemical, thermoelectric, ion, nuclear thermal and electromagnetic rocket engines - all fall into the first group which, for obvious reasons, can be categorized as "hot" space propulsion concepts. Space elevator, orbital tower, rolling satellite, orbital skyhook, tether propulsion and gravitational assist - are examples of the second category which lends itself for the title "cold" space propulsion concepts. The "hot" space propulsion concepts skyrocketed - literally and figuratively - from the naïve ideas of Jules Verne to the manned missions to the Moon. On the other hand, with the notable exception of gravitational assist, hardly any of the "cold" space propulsion concepts made any progress in terms of practical application. Why is that? This article aims to show that the right answer to this question has the potential comparable by its implications and practical consequences to that of transition from Jules Verne's stillborn and impractical conceptions of space flight to cogent and highly fertile ideas of Konstantin Tsiolkovsky and Yuri Kondratyuk.

Keywords : propulsion, rocket, rollet, spacecraft

Conference Title : ICAPES 2015 : International Conference on Aerospace, Propulsion and Energy Sciences

Conference Location : Stockholm, Sweden

Conference Dates : July 13-14, 2015