

SPACE PROPULSION SYMPOSIUM (C4)
Interactive Presentations (IP)

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LV ENERGETICS INCREASE BY IMPROVEMENT OF PNEUDRAULIC PROPELLANT FEED
SYSTEMS CHARACTERISTICS OF PROPULSION SYSTEMS**Abstract**

Pneumatic hydraulic feed systems (PPFS) of propulsion systems occupy one of important places in LV technical appearance formation and energetic characteristics. In turn, the PPFS is a difficult multifunctional system in which structure includes set of subsystems and systems with the features, parameters and operation modes. Perfection of them each brings the contribution to increase of the LV energetic characteristics as a whole. One the example of Yuzhnoye Design Office experience are in detail considered main directions of PPFS improvement. To them concern: reduction of initial free gas volumes in fuel tanks in interrelation with optimum temperature of filled propellant; a choice of an optimum sort of pressurization gas, its flow rate and temperature, with the chosen rational structure of a spray; cases of expedient application of heat exchanges in gas-bottles pressurization systems, and also the most successful placing of these bottles; important role of effect destratification use of the heated rests of propellant, etc. Results of the analysis of complex implementation of the given measurements it is shown essential increase of the LV energetic-mass characteristics, as a whole.