

SPACE EXPLORATION SYMPOSIUM (A3)
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Author: Dr. Oleg Saprykin
TSNIIMASH, Russian Federation, oleg.sapr@gmail.com

Mr. Anton Imshenetskiy
Central Research Institute for Machine Building (JSC TSNIIMASH), Russian Federation,
anton.imsh@gmail.com

THE METHODOLOGY OF COMPARING THE EFFECTIVENESS OF DIFFERENT SCENARIO FOR
LUNAR EXPLORATION BY MANNED AND AUTOMATIC MEANS

Abstract

The authors consider various scenarios for lunar exploration simultaneously by manned and automatic means. There is a problem in evaluating the effectiveness of these scenarios and conducting their comparative analysis, because scientific and technological results of those missions are difficult to formalize and quantify measured. Authors proposed the formalization methodology of this task, which is based on understanding five main objectives for exploration of the Moon. They proposed description 31 characteristics of the missions, which are describing the achievement of stated exploration goals. The method takes into account possible changes in weight ratios of these characteristics if parameters were achieved for various levels in the framework of this mission. As an example authors have considered 14 variants of missions for exploration of the moon, combining manned and unmanned means. Using the proposed method, they give the comparison of these scenarios, recommendations on the most preferable of them.