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Author: Dr. Oleg Saprykin
TSNIIMASH, Russian Federation

Mrs. Elena Baksheeva
TSNIIMASH, Russian Federation
Dr. Viktor Safronov
Research Institute of Precision Instruments, Russian Federation
Dr. Oleg Tolstel
Immanuel Kant Baltic Federal Uneversity, Russian Federation

THE CONCEPT OF USING ANTHROPOMORPHIC ROBOTS DURING HUMAN EXPLORATION OF THE MOON

Abstract

The paper discusses the different uses of anthropomorphic robots to meet the challenges of the Moon by human. It showed great potential of using such robots: to ensure the safety of astronauts, servicing a wide range of space objects, solving research problems in a non-deterministic environment. In the formulation's part for the selection of specific embodiments of robotic systems are invited to consider the transport and manipulator's tasks separately. This formulation has allowed more specifically set goals for robotic systems and to synthesize their various combinations in the optimized composition. Authors identified the most important problems of control systems development for space anthropomorphic robot; in particular, questions of inclusion in the robot control loop a human brain in relation to the lunar environment - in a copying robot mode on the lunar surface with the use of the remote operator and the exoskeleton. In addition, authors touched on learning and adaptation of the anthropomorphic robot. The article proposed the concept of the use of anthropomorphic robots on the lunar surface, which takes into account the expected dynamics of the lunar infrastructure and manned lunar base.