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TECHNOLOGY DEVELOPMENT ABOARD RUSSIAN SEGMENT OF THE ISS

Abstract

Space experiments associated with technology development and demonstrations aboard Russian segment of the International Space Station (ISS RS) for the benefit of the future space missions can be considered as one of the most important parts of the ISS RS utilization program. Onboard laser communication systems of a new generation; new systems for damages detection and repair work in outer space during crewmembers' extravehicular activity outside a human space complex; launching in orbit of micro-, nano-, and picosatellites, both from the station and during autonomous flight of a cargo spacecraft after completion of its main function to support the Space station flight; new systems of environmental control both inside and outside the station and others – all of them is a valuable contribution to the future space exploration, and also serves in many respects for the benefits of humanity. This paper explores major results of Russian experiments on space technology development and demonstrations aboard the ISS RS and analyses their future applications.