

## HUMAN SPACEFLIGHT SYMPOSIUM (B3)

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## ISS MANEUVERING: 15 YEARS OF EXPERIENCE

**Abstract**

November 2013 marked 15 years of the Functional Cargo Block (FGB) Zarya launch into orbit. It was the first element of the International Space Station (ISS). The ISS - the ninth human orbital station (OS) in the world - has evolved into the largest manmade spacecraft created in the history of space era. If we compare all the vehicles in LEO the ISS beats the record in the number of the performed maneuvers that differ in purpose, size, propulsion system, etc. Systematization of the ISS maneuvers is supplemented with statistical data of various parameters. The evolution of maneuvering strategies during different ISS life cycles starting from FGB insertion into orbit up to the present is provided. Present maneuvering strategies including safety from space debris and provision of comfortable conditions for crew due to delivery to and from the ISS by short rendezvous profile are presented. A quantitative and qualitative comparison of the ISS maneuvering with pre-existing Mir OS, Salyut-6, 7 and Skylab are provided.