

# Small Satellites for Scientific Research

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**Abstract.** This article reports on the international experience of scientific satellite launches for magnetosphere and ionosphere plasma research with an emphasis on the use of small satellites. For magnetospheric studies, satellites weighting 100–1000 kg are mainly used. In low Earth orbit (convenient for ionospheric studies) micro- and nanosatellites have dominated in the recent years. The paper formulates scientific objectives for the future micro- and nanosatellites in various orbits, as well as approaches to the assessment of their effectiveness. The paper discusses the common problems of this development field and their possible solutions, both as a whole and for the Russian space program in particular.

**Keywords:** magnetosphere, ionosphere, solar wind, microsatellite, nanosatellite, CubeSat