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Multi-satellite constellation of Moscow university "Sozvezdie-270" for monitoring of space weather effects and electromagnetic transients

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To the present Moscow University realizes the program of cubesat launching in frame of space project Sozvezdie 270. Within the framework of this project a constellation of cubesat nano-satellites with a set of instruments is being deployed, which, among other goals, provides monitoring of the near-Earth space radiation environment, control of the geo- and heliophysical conditions and electromagnetic transients of atmosphere and space origin. Along with the space constellation, a network of ground receiving stations is also being created. During the project implementation, 18 spacecraft of the cubesat format have been launched to date. Currently, there are 9 such spacecraft operating in near-Earth orbit, which transmit scientific and telemetric data. During 2024 - 2025 it is planned to launch at least 3 more such satellites into low circular polar orbits. Multi-satellite constellation has been implemented, which makes it possible to carry out simultaneous measurements of particle and quantum fluxes using the same type of instruments at different points in the near-Earth space. Such measurements provide unique information about the sub-relativistic electron flux dynamics, including variations due to precipitation, which is of great importance for understanding the mechanisms of trapped and quasi-trapped electron acceleration and losses.