

超小型衛星の可能性 Possibility of Microsatellite

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As a remote-sensing tool, 50-kg class micro-satellite has following great potentials compared to existing big satellite, namely, 1) Low cost fabrication compared to middle- or large sized satellite, namely, few M EUR including bus and mission payloads. The launch cost will be 1+ M EUR as piggyback, 2) quick fabrication: about one year for flight model, enabling application of the latest technologies, 3) Constellation flight, enabling frequent monitoring from low altitude, 4) On-demand operation, taking detail information at point of focus, according to requirement of users. Here we introduce the latest technologies for remote sensing, which will be launched onboard micro-satellites developed in universities, including high functional 5-m resolution telescopic camera, which can select any colors from 400-700 nm or 650-1050 nm at 1 nm step, and a bolometer array camera. We would suggest applications of micro-satellite and its constellation in order to monitor every subject which has dynamical variations, such as, cloud structure, hydrology including CO₂ flow, lightning, vegetation, agriculture, forest fire and smoke detection, dust, atmospheric and oceanic pollution, biology in ocean, glacier, and natural disasters. We should consider the best mix of micro and big satellites as a strategy of all Japan community.

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