



Cubesat Gravity Field Mission

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CHAMP, GRACE and GOCE missions have been successful in the field of satellite geodesy (especially to improve Earth's gravity field models) and have established the necessity towards the next generation gravity field missions. Especially, GRACE has shown its capabilities beyond any other gravity field missions. GRACE Follow-On mission is going to continue GRACE's legacy which is almost identical to GRACE mission with addition of laser interferometry. But these missions are not only quite expensive but also takes quite an effort to plan and to execute. Still there are few drawbacks such as under-sampling and incapability of exploring new ideas within a single mission (ex: to perform different orbit configurations with multi satellite mission(s) at different altitudes). The budget is the major limiting factor to build multi satellite mission(s).

Here, we offer a solution to overcome these drawbacks using cubesat/ nanosatellite mission. Cubesats are widely used in research because they are cheaper, smaller in size and building them is easy and faster than bigger satellites. Here, we design a 3D model of GRACE like mission with available sensors and explain how the Attitude and Orbit Control System (AOCS) works. The expected accuracies on final results of gravity field are also explained here.