

# GPS experiment on the balloon-based operation vehicle

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Abstract: JAXA has been developing a system to provide a long duration, good quality microgravity environment based on a capsule, named the Balloon-based Operation Vehicle, that can be released from a balloon. In this paper we will describe the Balloon-based operation vehicle itself and the experiments using GPS performed - in cooperation with Delft University of Technology - on the gondola of the balloon in 2008 (single baseline estimation) and 2009 (full attitude determination and relative positioning). The attitude calculated using raw observations from a GPS receiver during the 2009 experiment is compared with Sun Aspect Sensors' and Geomagnetic Aspect Sensor's results and moreover with the attitude as provided by the receiver itself. ©2010 IEEE.

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