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Status of GRACE-FO accelerometers and of the future accelerometer development for next gravity missions

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The GRACE FO mission, led by the JPL (Jet Propulsion Laboratory) and GFZ (GeoForschungsZentrum), is an Earth-orbiting gravity mission, continuation of the GRACE mission, which will produce an accurate model of the Earth's gravity field variation providing global climatic data during five years at least. Europe and US propose new gravity missions beyond GRACE-FO, with improving performance thanks to laser interferometry and better accelerometers.
The poster will firstly present the status of GRACE-FO accelerometers which was delivered beginning of 2016, with the expected performance and the main test results.
Then, the improvement of the accelerometer design for future gravity mission will be detailed. This new design is based on MicroSTAR configuration, a 3-axes ultra-sensitive accelerometer, with a cubic proof-mass which give, beyond the linear acceleration, the 3 angular accelerations for a better satellite attitude control. For linear acceleration, the performance will be improved by at least an order of magnitude with respect to GRACE-FO.