



## **First report on Swarm's Absolute Scalar Magnetometers and their various operating modes**

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Each of the three ESA Swarm satellites carries a vector field magnetometer (VFM) and an absolute scalar magnetometer (ASM), positioned on a boom away from the body of the satellite to minimize undesired magnetic perturbations, and distant enough from each other to avoid crosstalk. The VFM further shares an optical bench with a star imager (STR), to which it is thus rigidly attached. The primary role of the ASM is to provide precise 1 Hz absolute field intensity measurements, while the VFM and STR provide the additional data needed to accurately reconstruct the vector field. Each ASM instrument, however, can also produce 1 Hz experimental vector data without affecting its ability to deliver absolute scalar data. If requested, it can also run a 250 Hz scalar burst mode. Both these capacities have been operated on the three Swarm satellites during commissioning. In this talk, we will present and discuss early results from these various operating modes.