



Swarm – providing a new view of the Earth’s magnetic field

Mioara Mandea

CNES, Paris, France (mioara.mandea@cnes.fr)

Since decades, geomagnetic ground data have been obtained from magnetic observatories and repeat stations, being the main source of information on spatial and temporal variations of the geomagnetic field. Measurements obtained from Oersted, CHAMP and SAC-C satellites provide a new global perspective. The datasets provided by these satellites, over the past decades, have given us the ability to obtain an improved description of the geomagnetic field.

With the launch of Swarm constellation in 2013, we were for the first time able to view the Earth’s magnetic field variations with an unprecedented accuracy - providing a truly unique window into a large number of key processes within the Earth system, many of which are difficult to fully observe in any other way. Swarm has provided data that are not only critically valuable on their own, but also as an excellent complement to other geophysical data, as gravity data, for example.

Here, a review of the history of magnetic mapping from space is given, the realization of the value of measuring the magnetic field by a constellation is underlined, and some key science findings of the mission are highlighted.