Recent updates of the Swarm L2 products in the context of mantle EM induction studies

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This contribution presents an overview of new and updated Swarm L2 products related to the mantle EM induction studies. Specifically, we discuss derivation of magnetospheric Q-responses and present updated M2 tidal magnetic signals from the most recent Swarm data. Further, these data are inverted jointly to constrain the conductivity of the upper and lower mantle in the depth range between 10 and 1500 km. The challenging task of accounting for the ocean induction effect and motionally-induced signals was addressed by using the full 3D electromagnetic modeling as a forward operator, which incurs additional computational resources. Additionally, we present the methodology to estimate the uncertainty of the obtained conductivity models using stochastic sampling methods.