



## **Longitudinal Structures in the Swarm Plasma Densities**

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The plasma density measurements by the Swarm Langmuir Probes show clear longitudinal (zonal) structures at mid- and sometimes also at equatorial latitudes. The phenomenon has previously been seen with ionosondes, in TEC data, and density profiles from the COSMIC satellite. At Swarm altitudes, in the upper F region, the structures have been explained as a result of meridional and zonal neutral winds, that can push plasma up and down along geomagnetic field-lines, whose orientation varies with longitude. The Swarm data set, so far in a period of low solar activity, covers the parameters LT, latitude, longitude, season comprehensively and densely compared to other data sets used in previous works.

We show how the zonal density structures vary with these parameters and explore possibilities to deduce characteristics of the neutral wind and neutral density from the plasma density.