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Localised plasma density enhancements around comet CG/67P

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Comet 67P/Churyumov-Gerasimenko, target of the ESA's Rosetta mission, reached its perihelion at 1.3 AU from the Sun in August 2015. Its plasma environment will go on being monitored by the Rosetta Plasma Consortium (RPC) as the distance to the sun increases, until end of mission in September 2016.

Combining observations from the different RPC sensors, we investigate localised, strong enhancements of the cometary plasma density over short timescales ($\sim$ minutes to seconds) observed during the period April 2015 - January 2016. These strong plasma density variations (RPC-MIP and RPC-LAP) are likely associated to cold electrons (RPC-IES) and generally observed during magnetic field rotations (RPC-MAG). The location of such events, both in the rotating comet frame and with regard to the magnetic field direction, is discussed to better constrain the mechanism at the origin of these localised plasma density enhancements.