



Convective electric field control of the cold plasma at comet 67P

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We present initial results on how the solar wind convective electric field $E = -v \times B$ is affecting the cold plasma of comet 67P/Churyumov-Gerasimenko. The solar wind velocity v is assumed to be directed radially away from the Sun, and the magnetic field B is obtained from measurements of the magnetometer (MAG), within the coma of 67P. The presence of a cold plasma is determined by the Langmuir probe (LAP) instrument and is defined as when the derivative of the measured electron current with respect to the probe bias voltage exceeds 70 nA/V. We find that a significant fraction of the cold plasma is found in the $-E$ hemisphere of the comet. Sources of errors include e.g. a draping of the magnetic field leading to the measured B inside the coma not being the same as the solar wind B , as well as a deflection of the solar wind. Despite this, the results agrees with previous simulation results on how the cometary coma becomes asymmetric with respect to the convective electric field.