On the magnetic characteristics of magnetic holes in the solar wind between Mercury and Earth

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The occurrence rate of linear and pseudo magnetic holes has been determined during MESSENGER’s cruise phase starting from Earth (2005) and arriving at Mercury (2011). It is shown that the occurrence rate of linear magnetic holes, defined as a maximum of 10° rotation of the magnetic field over the hole, slowly decreases from Mercury to Earth. The pseudo magnetic holes, defined as a rotation between 10° and 45° over the hole, have mostly a constant occurrence rate, with a slight increase in front of the Earth and a decrease around the Earth. The width and depth of these structures seem to strongly differ depending on whether they are inside or outside of Venus’s orbit.