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# The interstellar magnetic field in the shell of the Local Bubble

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## Abstract

The magnetic field in the local interstellar medium does not follow the large-scale Galactic magnetic field. Instead it has probably been distorted by the Local Bubble, a cavity of hot ionized gas extending all around the Sun and surrounded by a shell of cold neutral gas and dust. The Local Bubble is probably just an example of interstellar bubble produced by supernova explosions.

In this talk, I will present a model of the magnetic field in the shell of the Local Bubble, obtained by fitting an analytical description of the magnetic field swept up by a non-spherical supernova explosion to Planck observations of dust polarized emission within 30 degrees of the Galactic poles. The best-fit solution is consistent with a highly deformed magnetic field, with significantly different directions towards the north and south Galactic poles.

The work presented in this talk sets a methodological framework for modelling the three-dimensional structure of the magnetic field in the local interstellar medium, which is a most awaited input for models of the large-scale Galactic magnetic field.

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