

Near-infrared Polarimetry and Interstellar Magnetic Fields in the Galactic Center

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Abstract. We present a large-scale view of the magnetic field (MF) in the central $3^\circ \times 2^\circ$ region of our Galaxy. There is a smooth transition of the large-scale MF configuration in this region.

Keywords. infrared: ISM, techniques: polarimetric, magnetic fields

We have carried out polarimetric observations using the near-infrared polarimetric camera SIRPOL on the 1.4 m telescope IRSF, and have obtained a large-scale view of the magnetic field in the central $3^\circ \times 2^\circ$ region of our Galaxy. We find that near the Galactic plane, the magnetic field is almost parallel to the Galactic plane (i.e., *toroidal* configuration) but at high Galactic latitudes ($|b| > 0.4^\circ$), the magnetic field is nearly perpendicular to the plane (i.e., *poloidal* configuration). For more detail, see Nishiyama *et al.* (2009), Nishiyama *et al.* (2010).

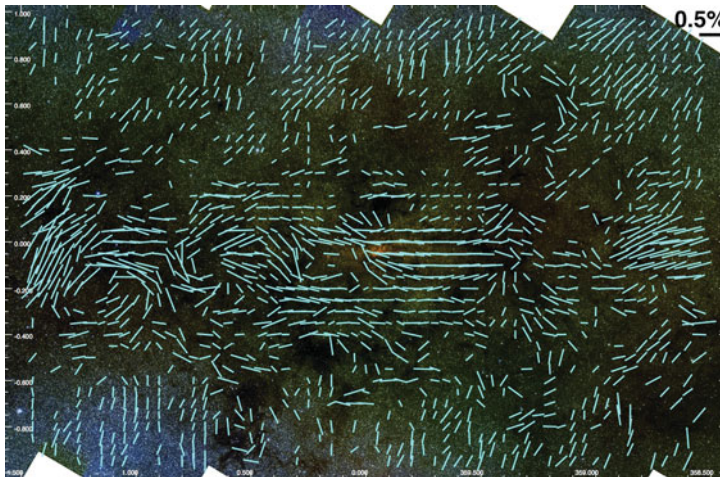


Figure 1. Near-infrared (J, H, K_S) mosaic image of the Galactic center region covering $3^\circ \times 2^\circ$ in the Galactic coordinate. Observed directions of the magnetic fields at the Galactic center are also plotted with cyan bars whose length indicates the degree of polarization in the K_S band.

References

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