

## True magnetic field at the core surface

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A newly derived formula, which relates the stationary magnetic field to the lateral conductivity heterogeneity, was used to estimate the conductivity heterogeneity from the direct inversion of the surface observed geomagnetic field. This process enable us to separate the magnetic field of the mantle origin and the core origin, as well as the toroidal field at the core surface. The mantle-generated field contains most of the stable features in the geomagnetic field, whereas the core field is dominated by the dipole, quadrupole and the axial symmetric field of higher degrees.