

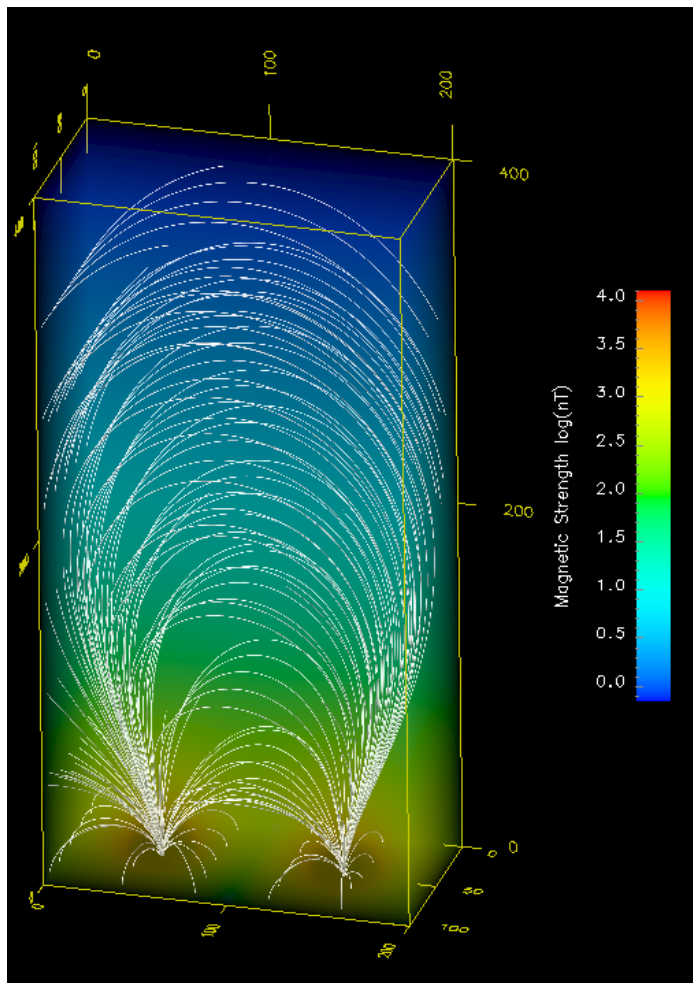
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Modeling Mars' Ionospheric Electrodynamics

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- * Background composition

- neutral atmosphere MTGCM (Bougher et al. 2009)
- chemistry model to calculate the ionization profile (sources and losses)

- * Ionospheric dynamics

- modified multi-fluid model for ion species and e⁻
- includes ion-neutral and electron-neutral collisions
- collisions determine conductivities through momentum equations and generalized Ohm's law.

- * Simplified magnetic configuration

- using three representative magnetic morphologies:
 - closed field
 - open field (cusp-like)
 - flat (uniform) field