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LFM-TIEGCM-RCM (LTR)

The LFM is a global MHD model written by John **L**yon, Joel **F**edder and Clark **M**obarry. It is primarily used to better understand Earth's Magnetosphere. The LFM can be coupled with a variety of models to aide in understanding of the physical processes in Geospace , such as:

- Magnetosphere Ionosphere Coupler/Solver (MIX)
- Thermosphere Ionosphere Electrodynamic General Circulation Model (TIEGCM)
- Rice Convection Model (RCM)
  The coupled combination of models is called the LTR (LFM-TIEGCM-RCM).

The documentation on this wiki contains limited scientific descriptions of the models. It is intended as a guide to compile & execute the code(s) and documents some of the post-processing tools which have been developed for LTR.

> **Note**
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> The LTR models and documentation are constantly evolving. This wiki documents the latest release. In some cases, this includes documentation for unreleased/upcoming features. You should sign up to the LTR-announce mailing list and make sure you're using the latest release. You can find a list of upcoming features via the LTR roadmap.

Scientific Documentation

- The October-November 2004 Journal of Atmospheric and Solar-Terrestrial Physics special issue: Towards an Integrated Model of the Space Weather System (i.e. Lyon 2004).
- The publications and presentations listed at the BU CISM website
- LFM Field Aligned Current calculation - Notes on the LFM inner boundary conditions. Gives insight into the calculation of

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  , which is sent to MIX.
- 2010 Merkin, & Lyon Effects of the low-latitude ionospheric boundary condition on the global magnetosphere
- 2015 Wiltberger et al. LFM-RCM Coupling paper

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