



## **xCHAOS - A Magnetic Field Model Derived from Nine Years of Recent Satellite Data**

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Two years ago we presented the CHAOS field model, which was derived from CHAMP, Ørsted, and SAC-C magnetic satellite data spanning March 1999 to August 2005. Here we present an extended version of the CHAOS model, called xCHAOS, which is derived using nine years (March 1999 to March 2008) of satellite data, augmented by observatory monthly mean values. The static field is described up to spherical harmonic degree  $n = 50$ ; the time varying field is modeled up to  $n = 18$ , and using order-5 splines with a knot separation of 1 year.

The xCHAOS model is regularized by minimizing the time-space average of a function of the second time derivative at the core-mantle-boundary. We will discuss the choice of regularization and comment on the data uncertainty. The influence of model parameterization on the results will also be presented. Finally, we will compare our model with other recent magnetic field models.