Geophysical Research Abstracts, Vol. 7, 07507, 2005
SRef-ID: 1607-7962/gra/EGU05-A-07507

Solar cycle variations in convection zone dynamics from ECHO 1994-2004

S. J. Jiménez-Reyes (IAC), D. Salabert (HAO-NCAR), A. Eff-Darwich (ULL,IAC)

(1) Instituto de Astrofísica de Canarias (sjimenez@iac.es), (2) High Altitude Observatory (salabert@hao.ucar.edu), (3) Universidad de La Laguna (adarwich@iac.es)

ECHO (Experiment for Coordinated Heliosismic Observations) has been collecting solar observations for more than 10 years, covering the falling and rising phases of two different solar cycles. The main characteristics of this experiment can be summarized by its high sensitivity to solar oscillations, the long-term stability of the Doppler signal and its imaging capability, making it possible to observe an ample range of acoustic modes that sample different depths of the solar interior. These characteristics convert the ECHO database in one of the most comprehensive to investigate the progress of the solar cycle and the underlying dynamo process. In the present work, we make use of a new inversion methodology to infer the rotation rate of the radiative interior from the inversion of mode sets that extend from l=1 to 100. Different data sets, obtained from ECHO timeseries 108 and 360 days-long, are used to carry out an extensive analysis of the rotation rate, in particular possible latitudinal and temporal variations of the tachocline parameters, already observed by GONG and MDI team but never confirmed by independent analysis.