



CHAMP and GRACE Resonance Analysis

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CHAMP's and GRACE's passing through particular resonances provide an excellent opportunity to independently estimate the corresponding resonant lumped coefficients. Using highly precise orbital data we have repeatedly derived values for lumped geopotential harmonic coefficients for 46/3 (46 revolutions over 3 days), 77/5, 31/2, 47/3 and 61/4. The values for the lumped harmonics come from analysis of the variation in the orbital inclination that they cause. Preliminary results for the recent 47/3 and 94/6 CHAMP resonance (spring 2007) will be presented. Comparison of these coefficients with recent geopotential models from CHAMP and GRACE reveal good correspondence to the model parameters in view and confirm the validity of our method as well as the high quality of the new global models.