



GRACE Gravity field recovery from simulated data with an alternative processing approach

C. Gruber(1) and A. Bezdek(1)

Astronomical Institute of the Czech Republic, Ondrejov Observatory, gruber@asu.cas.cz

Gravity field recovery from GRACE A/B range rate data shall be formulated in a potential difference approach. In order to solve a linear system of (B-A) potential difference observations the required assembling of the normal equations is (still) a time consuming task. Since the potential in the second satellite can be derived from a shift of the lumped harmonical spectrum in the first satellite an alternative approach shall be examined on behalf of a linearized formulation for the differences. Linearization of this filter, depending on the geometrical distances (d_u , d_l) between the pair of satellites works well for low degrees/orders but degenerates rapidly when approaching higher resolution due to its quadrature in the normal equations. Results from a simulated GRACE scenario will be discussed and the applicability of the approach is reviewed.