



## **Surveying the 1991 jerk in the core-mantle-boundary zone**

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The jerk phenomenon, e.g. about 1991, was detected, isolated and described with globally distributed observatory data using different approximative techniques. Recently (Ballani et al. 2002, 2005), an inversion method has been developed in order to calculate and to show the influence of a weakly conducting mantle completed at the bottom by a high-conductive layer. These studies, applied to a combination of terrestrial and satellite magnetic field measurements, base on a non-harmonic downward continuation of the field components to meet the conditions of a highly conducting thin bottom-layer. Up to now we focused on the appearance of the jerk in the East component of the magnetic field. However, as pointed out by Alexandrescu et al. (1996) jerks are not only zonal features, rather they are also sensed in the North and downward components of the magnetic field.

Basing on these data and assumptions, this contribution presents a highly resolved new view of the jerk phenomenon on the core-mantle boundary (CMB). A synopsis of all three magnetic components and their time-derivatives is given for a time span of about three years around the considered epoch 1991. In addition, the CMB fluid velocities and accelerations are calculated applying the frozen flux hypothesis and the tangential geostrophic approximation. The main aspects for this comparison are: the influence of the mantle conductivity, the different sensitivities of the magnetic components, fluid flows and their time-derivatives on the CMB.