Geophysical Research Abstracts
Vol. 12, EGU2010-1123-2, 2010
EGU General Assembly 2010

\textbf{Tomography of Ionosphere electron density and its abnormity analysis during Wenchuan earthquake }

Xiaoya Wang and Nan Xing
Shanghai Astronomical Observatory,Chinese Academy of Sciences, Shanghai 200030,China (wxy@shao.ac.cn)

A multiple-arc method and Kriging interpolation are applied to obtain VTEC as well as DCB using ground-based GPS data. Given by the time variation characteristics of VTEC and DCB, VTEC is calculated every 30 minutes as local variables, and DCB is calculated every day as global variables. Kriging method, taking the spatial information of VTEC into account, is useful to make VTEC more precise and stable. Meanwhile, based on 3-variable spline basis function, we expand electron density into a linear combination of a set of grid points. Tomography of Ionosphere electron density is made by MART. The results show the coherence with CHAMP occultation results. We applied these two ways to process the ground-based GPS data of Yangzi River Triangle Region in May, 2008 when the shocking earthquake happened in Wenchuan. A simple statistic analysis reveals the response of ionosphere to the earthquake and also the abnormal signal occurred before the earthquake.