

## Time variation in eigenfrequency of OS0 mode of the Earth's free oscillations

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We have detected time variation in eigenfrequency of the OS0 mode of the Earth's free oscillations from analysis of IRIS GSN and GEOSCOPE data for five great earthquakes between 1994 and 2001 using the sompi method. All of the observed frequencies have been obtained with the error lower than 0.11 micro Hz and the maximum frequency difference is 0.28 micro Hz between 1994 and 1998 events. The observed frequency seems to increase after 1994, attain the peak about 1998 and then decrease about 2001. If we assume that the cause of this time variation in eigenfrequency is in the Earth's interior, the large change during the short time interval may represent large-scale structural change in the Earth's fluid region, either the ocean or the outer core. The present result is coincident to the recent result on the J2 trend change (Cox and Chao 2002) in variation period.