

## **Preliminary result of seismic response prior to mw 9.0 of tohoku earthquake in Japan**

### **ABSTRACT**

This paper investigates a possible earthquake precursor based on the disturbance in waveform prior to the Mw9.0 11th March 2011 Tohoku earthquake which caused a tsunami. Waveform data on 10th March 2011 from two F-Net stations which are TYS and TMR in Tohoku region were used in this study. On top of that, waveform data from regions outside Tohoku which are TSK in Kanto and KMU in Hokkaido were also investigated to study the effect of distance between observatory stations and the epicentre on the disturbances in waveform. Results show that a disturbance in the waveform reading was detected at station TYS and TMR at 09:00 UT on 10th March 2011. This disturbance, manifested by the appearances of primary and secondary waves, suggests an occurrence of weak seismic activity. For stations outside Tohoku, the disturbance was more pronounced at TSK compared to TMU. This might be due to the location of TSK which is nearer to the epicentre compared to KMU. The basic of early precursor can be made based on this disturbance.