

Study of Tree Bio- electric Potential signal related to seismic activities

Vinod Kushwah, Rudraksh Tiwari, M.S.Gaur & R.K.Tiwari

Department of Physics, Hindustan College of Science & Technology, Farah, Mathura-281122(U.P.)

INDIA *kushwahvk2000@gmail.com; twrrudraksh1@gmail.com; mulayamgaur@rediffmail.com;*

twr_uv@yahoo.co.in

The study of seismic events is a very big challenge to every researcher because it causes huge destruction of life and properties not only in India but in all other countries are trying to find the pre-indication of such hazards. In recent time, the research is going on in India and other countries like Japan, US, Germany & France etc. for try to prediction of seismic events by various methods. We are trying to find a new technique for detection of ground and such atmospheric signals which is related to seismic events or affects the signal to propagate through the path they travel. We have established a new experimental setup (i.e. Tree bio-electric potential sensor) site in Farah region (Geo. Lat. 27.17^oN, Geo. Long. 77.47^oE) Mathura, India. The set up has been installed in the stem of long ages banyan tree(around 100yrs old) for recording the data from the month of November 2011, the data have been checked and verified by various artificial methods and found very good correlation. After establishing the set-up we started the real time recording data (round O'clock). The enhancement of the amplitude of tree bio-electric potential during the range of around 30mV to 45mV from abscissa level and xylem and phloem concentration(which transport the mineral of the tree from ground to the upper parts) are abruptly decreases around 40 dB with prior to seismic activities (near Delhi earthquake on 5 March, 2012, Ms=4.9 depth 14 km and Rajasthan earthquake on 23 December, 2011, Ms = 5.1, depth 12km) because the author has been reported that when the magnitude 4 seismic activities has been generated under the ground the huge amount of energy suddenly released around 8×10^8 ergs in 360^o direction and this energy has been coming near the hypocenter before and after the seismic activity or in the solar flares and magnetic storm during the analysis and found negative correlation of these events, if this activities came in contact the fault reason the signature has been received as such the speed of light. The detailed studies of the observed events are in progress with the statistical analysis of the data. We choose the observing site Farah region because this region is well known for conductive channel of seismic activity.