



## **TRIGGERING OF EARTHQUAKE BY EARTHQUAKE - A PLAUSIBLE MODEL**

**Daya SHANKER<sup>1</sup>**

### **SUMMARY**

Triggering of earthquake by earthquake have been observed on many places in the world. During the time interval of 3<sup>rd</sup> Feb – 20<sup>th</sup> April 1988 four independent main shocks occurred in North – East India:  $M = 5.5$ , 03/02/1988;  $M = 5.8$ , 06/02/1988;  $M = 6.2$ , 15/02/1988; and  $M = 5.8$ , 20/02/1988. The seismicity rates within this 78 day interval is increased by a factor of 15 and 6 with respect to the mean, long term seismicity for  $M \geq 5.5$  and  $M \geq 6.1$ , respectively. In terms of probability, it has been found out that the probability of observing by chance four events of  $M \geq 5.5$  or one events of  $M \geq 6.1$  in NE-India is equal to only 0.4243 and 0.3680, respectively. These results imply that the observed seismicity has a non-random time clustering. Similar earthquake time clusters were indentified to have occurred in NE-India in 1930 and 1951. A triggering model has been proposed to interpret the earthquake clustering: the first event of the earthquake sequence produces transient stress changes that cause an acceleration to the stress loading, and then to seismic failure, to remote highly pre-stressed regions.

<sup>1</sup> Department of Earthquake Engineering, University of Roorkee, India. E-mail: quake@rurkiu.ernet.in