

# Report on Real Time Earthquake Location

**From: Earthquake Monitoring Center (EMC) of NCS  
(R. K. Singh, S. K. Prajapati, Shanker Pal, Prashant Chingtham,  
Narendra Pandey and Munish Gors)**

National Center for Seismology  
Ministry of Earth Sciences  
Government of India

Month: October 2024  
Technical Report No: NCS/2024/10

# Report of Earthquakes occurred in the month of October 2024

## 1) Introduction:

National Center for Seismology maintains a National Seismological Network of **166 stations** each having state of art equipment and spreading all across the country (**Figure:1**). Using these stations during the period 01<sup>st</sup> – 31<sup>st</sup> October 2024 a total number of 143 earthquakes have

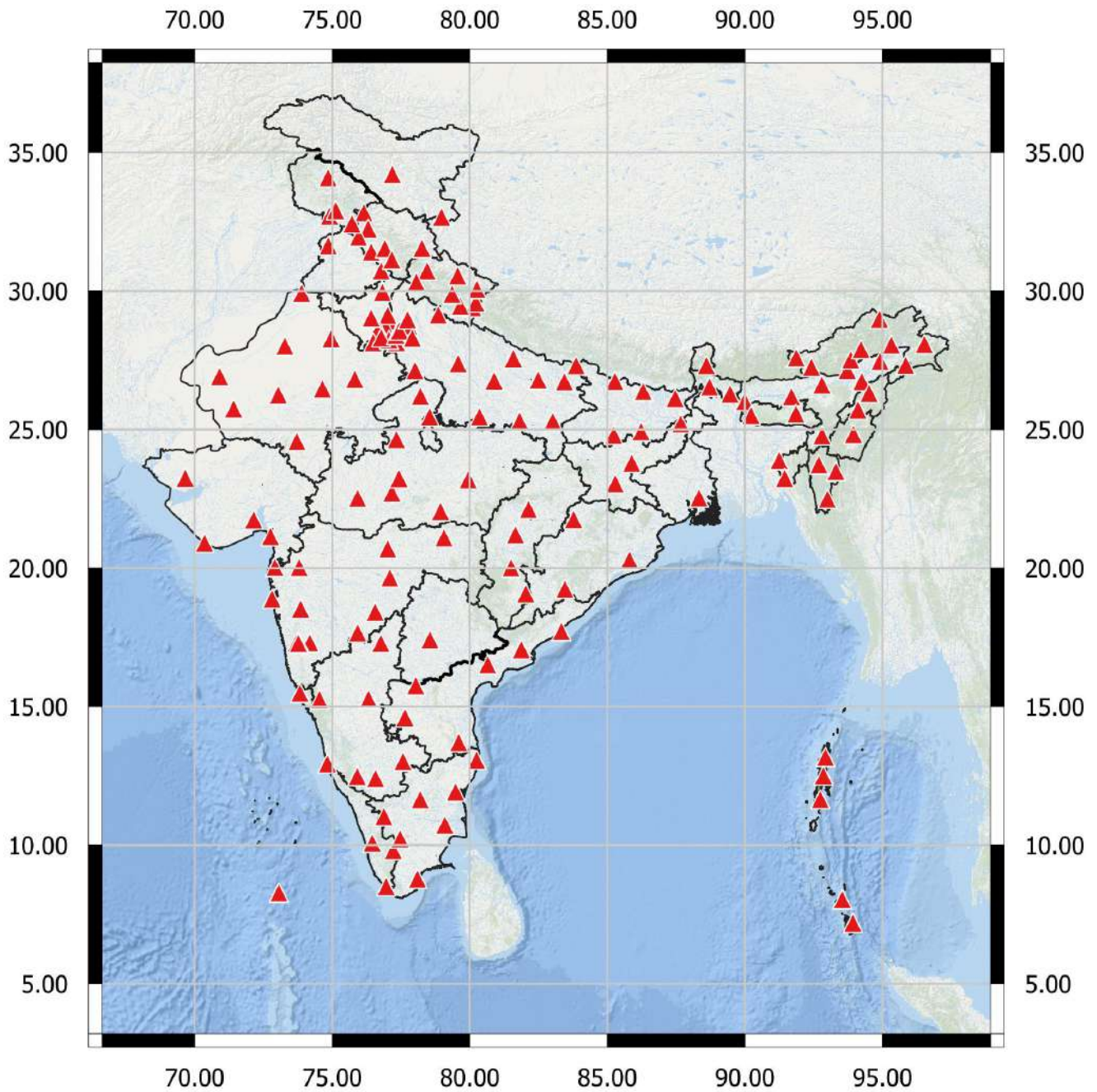


Figure 1: National Seismological Network (NSN) of 166 Stations

been located and disseminated from the center (**Figure:2**), out of which 136 earthquakes has occurred in India and its neighborhood region bounded by the coordinates 0° - 40°N & 60° -100°E (**Figure:3**).

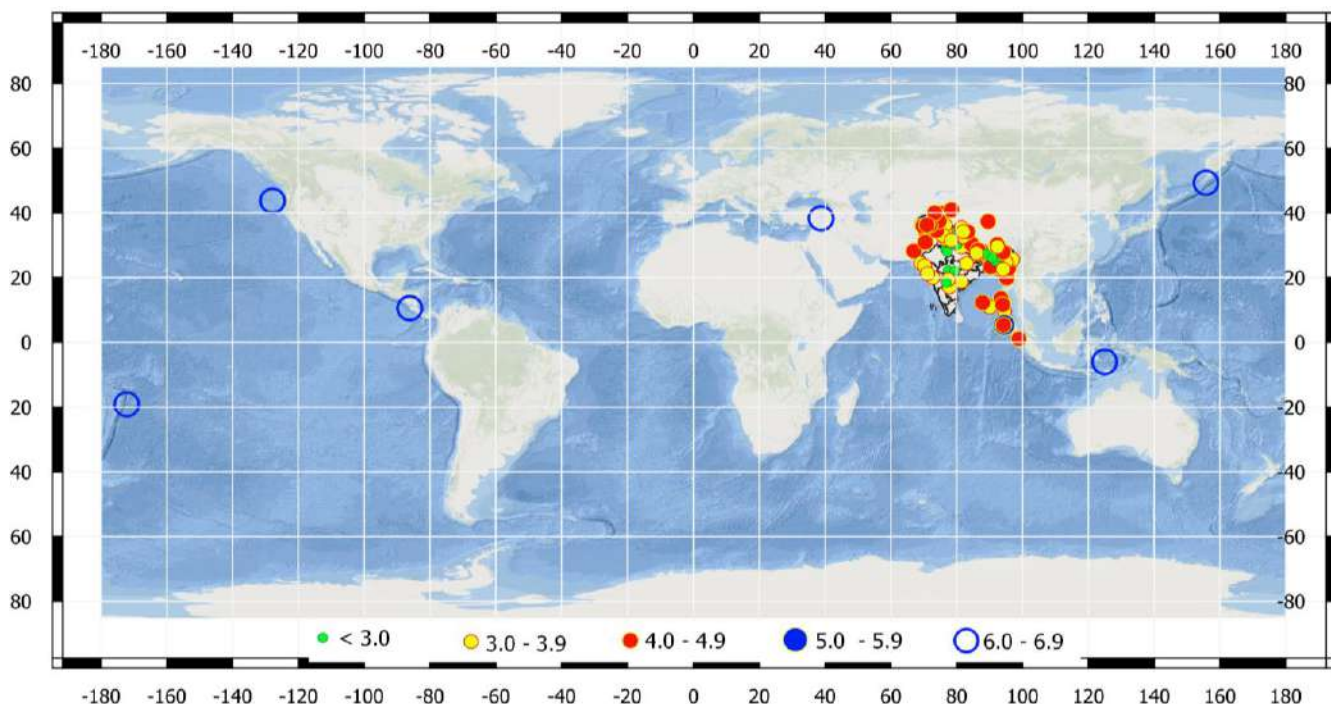


Figure 2: Earthquakes located and disseminated by NCS during 01<sup>st</sup> – 31<sup>st</sup> October 2024

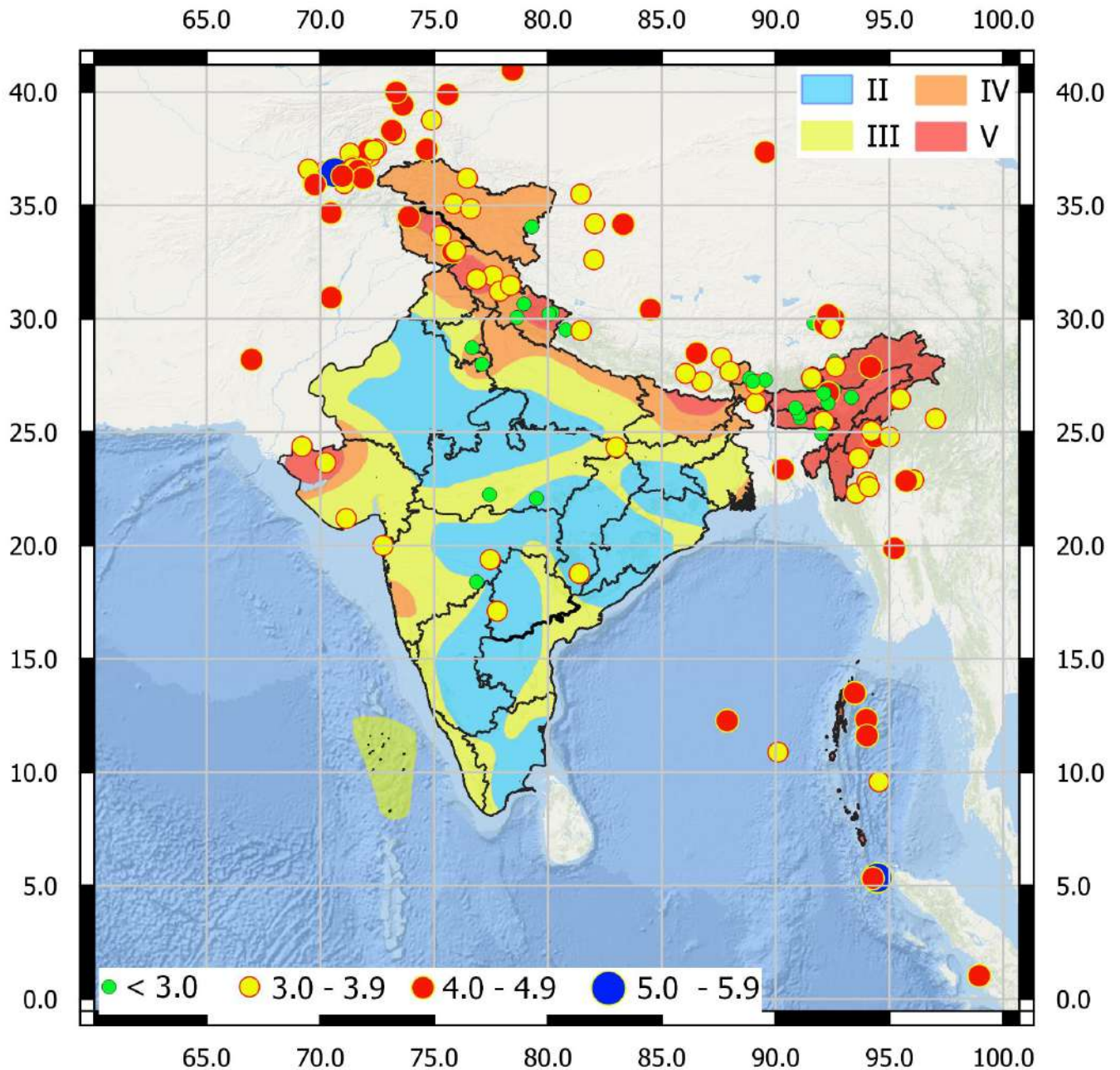
## 2) Seismicity:

During the period, the majority of earthquakes within India and its neighbourhood region bounded by the coordinates 0-40°N & 60-100°E; were located in Hindu Kush region, North India (Jammu and Kashmir, Ladakh, Himachal Pradesh and Uttarakhand), North East India (Arunachal Pradesh, Assam, Meghalya, Manipur and Sikkim) as shown in **Figure 3**.

Few earthquakes of smaller magnitudes were also reported in northern (Jhajjar and Nuh in Haryana; Sonbhadra in Uttar Pradesh), western (Amreli and Kachchh in Gujrat; Latur, Nanded and Palghar in Maharashtra); southern (Vikarabad in Telangana); central (Narmadapuram and Seoni in Madhya Pradesh; Dantewada in Chhatisgarh) and eastern (Cooch Behar in West Bengal) part of country. **Twenty-Seven** earthquakes of smaller magnitude (**M < 3.0**) comprising **19%** of all earthquakes occurred during 01<sup>st</sup> to 31<sup>st</sup> October 2024. **Two** earthquakes of magnitude **M:5.0 and above** occurred during the month in the region; as detailed in **Table:1**.

**Table:1 Earthquakes of  $M \geq 5.0$  occurred during October 2024 within India and its neighbourhood**

SN	Date	Time (IST)	Lat( $^{\circ}$ N)	Long( $^{\circ}$ E)	D (KM)	M	Region
1	2024-10-13	12:31:41	05.34	94.47	60	5.0	Northern Sumatra
2	2024-10-17	00:26:49	36.45	70.63	200	5.5	Afghanistan



*Figure 3: Map showing the seismicity during the period 01<sup>st</sup> – 31<sup>st</sup> October 2024 occurred in India and its neighbourhood region along with the seismic zone of India.*

Out of total 143 earthquakes **46%** and **29%** earthquakes occurred in the magnitude range **3.0-3.9** and **4.0-4.9** respectively; whereas **two** earthquakes in the magnitude range 5.0-5.9 occurred

during the period of which three were inside the grid of 0- 40<sup>0</sup>N & 60-100<sup>0</sup>E as shown in **Figure 3**. All the **six** earthquakes in the magnitude range of **6.0-6.9** were occurred outside the grid of 0- 40<sup>0</sup>N & 60-100<sup>0</sup>E; as shown in **Figure 2** and **Figure 4**. Detail list of earthquakes occurred during the month is available at [www.seismo.gov.in](http://www.seismo.gov.in)

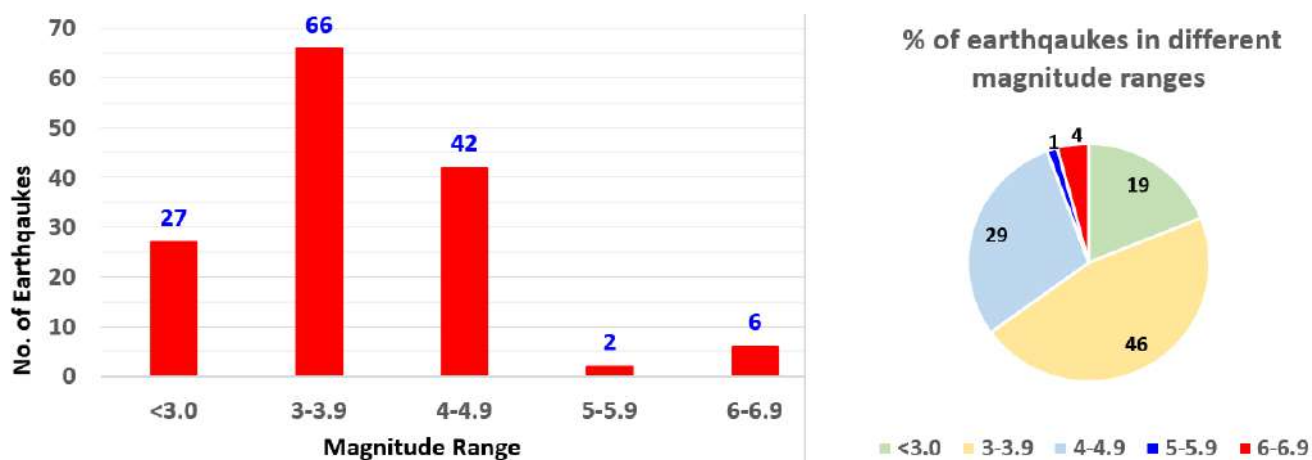


Figure 4: Distribution of earthquakes in the different magnitude range during 01<sup>st</sup> – 31<sup>st</sup> October 2024.

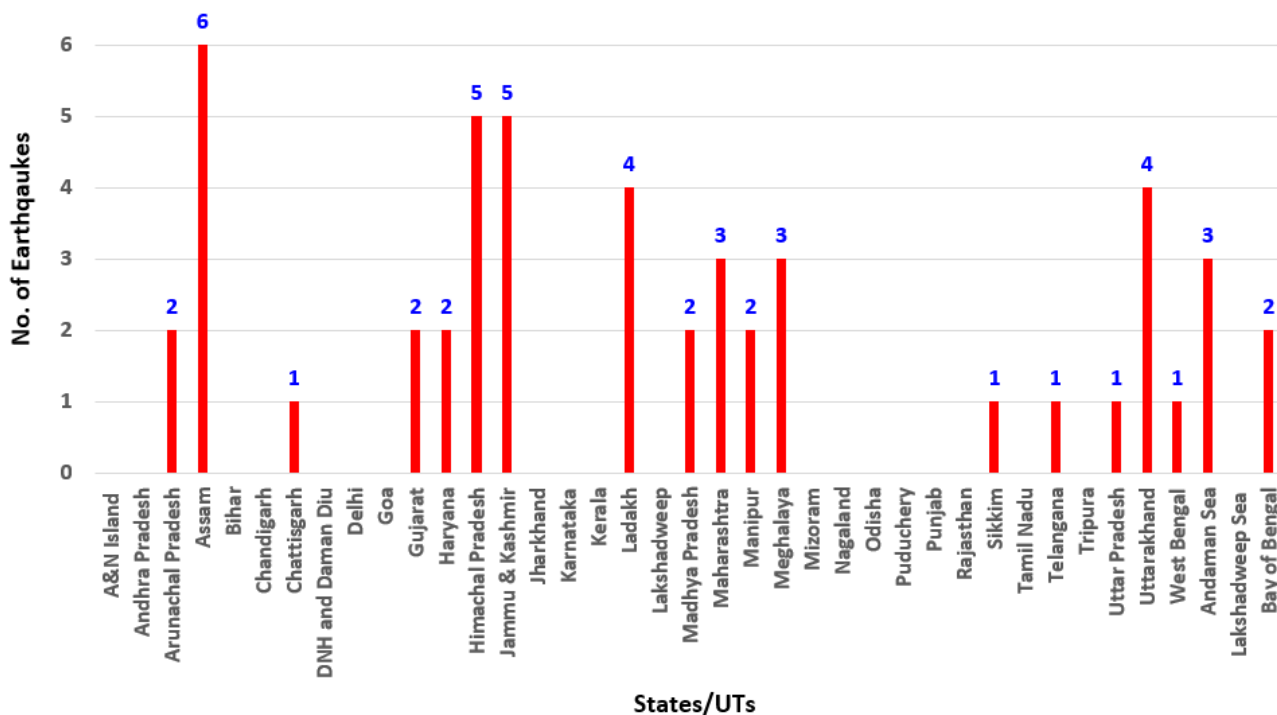


Figure 5: State wise distribution of earthquakes during the period 01<sup>st</sup> – 31<sup>st</sup> October 2024.

Total **50** earthquakes occurred within Indian territory; of which 6 earthquakes occurred in Assam and 5 each in Jammu & Kashmir and Himachal Pradesh sea during the period. Out of 50 earthquakes **21** and **14** earthquakes occurred in **North** and **North-East** region respectively.

State/UT and region wise distribution of earthquakes occurred during 01<sup>st</sup> – 31<sup>st</sup> October 2024 is shown in **Figure 5** and **Figure 6** respectively.

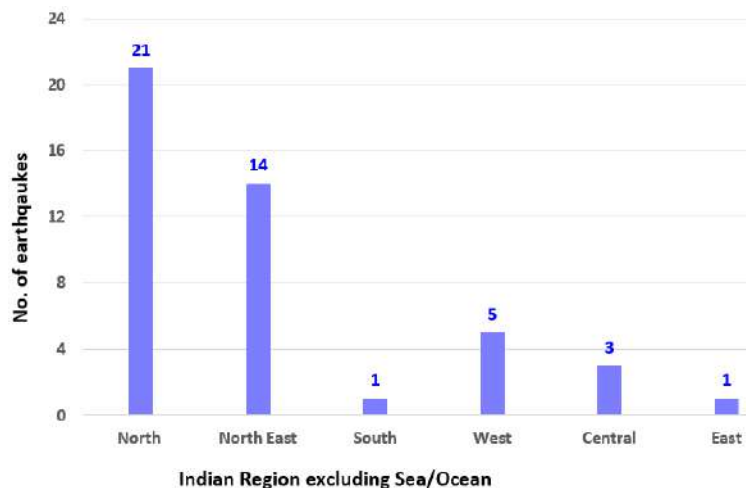


Figure: 6 Region wise distribution

### 3) Significant Activity:

**Afghanistan Earthquakes:** An earthquake of **M:5.5** occurred at **00:26:49 IST** of **17<sup>th</sup> October 2024** in Jurm, Afghanistan at 36.45°N and 70.63°E with focal depth of 200 km. The epicentre is about 210 Km N of Jalalabad; 335 Km E of Gilgit; 245 Km NE of Kabul and 460 Km NW of Srinagar. **Figure 7** depicts the expected intensity of this earthquake around the source zone.

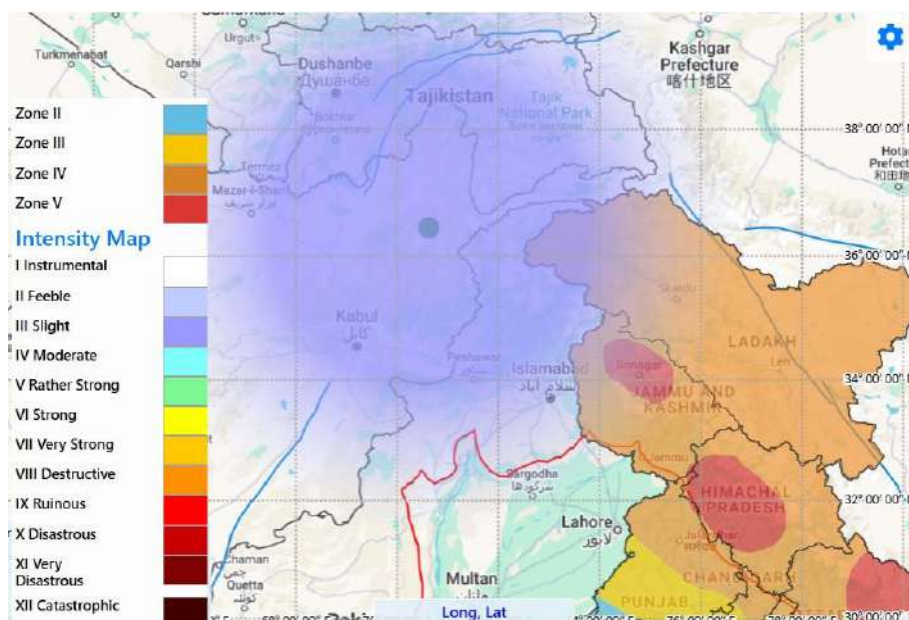


Figure 7: Intensity map of earthquake of M 5.8 occurred on 11<sup>th</sup> October 2024 at Multan, Pakistan.

This earthquake was reportedly felt in Jammu and Kashmir. More details are available at the URL <https://riseq.seismo.gov.in/riseq/earthquake/event/eERaWm84NzUzZURLZ3g2UXp1NHdwQT09/Reviewed>.

#### 4) Dissemination Performance:

More than **80%** earthquakes of **M<5.0** and more than **90%** earthquakes **M>5.0** occurred within India and its neighbourhood region bounded by the coordinates 0-40°N & 60-100°E were disseminated within 10 minutes as shown in **Figure 8**.

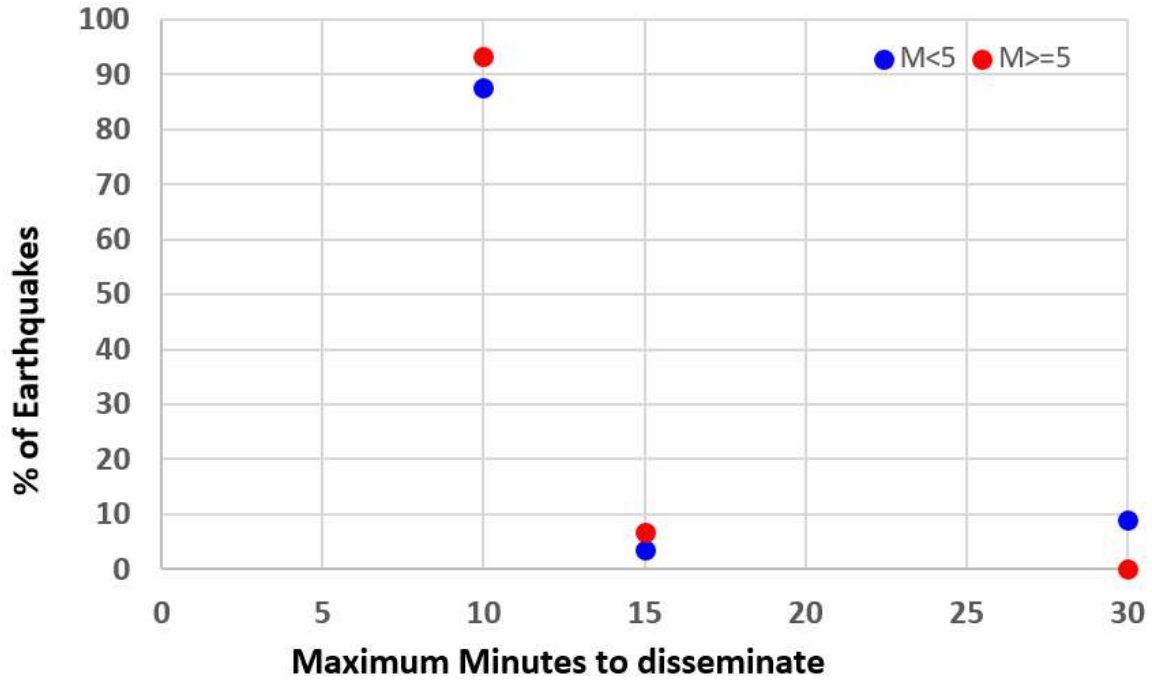


Figure 8: Dissemination of earthquakes within different time ranges during 01<sup>st</sup> –31<sup>st</sup> October 2024.