AOGS 2005

Phase Character of Anomaly of Xinjiang, Bachu-Jiashi Earthquake of Ms 6.8, 2003

Guoying, Gao

Seismological Bureau of Xinjiang Uygur Autonomous Region, Urumqi, China, 830011

Bachu-Jiashi Earthquake of Ms 6.8 of Feb.24th, 2003, Xinjiang, is the strongest event of Ms 6 occurring in Jiashi seismic region once more after 9 Ms 6 events in Jiashi seismic region from 1997 to 1998. The earthquake kills 268, and causes economic loss of 1.3 billion. We analyze dynamic evolvement of seismicity image and precursor data before the Ms 6.8 earthquake, and study the basic character of various anomaly in different phases of earthquake preparation. We have following conclusions:

1. Dynamic evolvement of temporal and spatial image of seismicity before Ms 6.8 earthquake has clear phases. During middle-term seismogenic phase, seismicity has obvious anomalous feature of quiescence from "field " to "source". During short-term phase, earthquakes with the magnitude of Ms 4 and Ms 5 near the epicenter region gradually increase and approach to source region, meanwhile, there occurred direct foreshocks in source region and seismicity increase remarkably. Such remarkable-quiescence and clear-increase reflects clear phase character of seismogenic process.
2. Xinjiang precursor data show trend and clear short-impending anomaly before the earthquake. During short-term phase, multi-anomalies in large region appear synchronously in time, and distribute widely in space, and magnitude of abnormal change is great. During short-impending phase, anomaly change of data around source region last shortly , mostly abrupt anomalies.
3. During short-term phase, seismicity increasing and remarkable abnormal change of precursor data appear synchronously, which shows increasing process of regional stress field and source region.

Keywords: Xinjiang Bachu-Jiashi Earthquake Earthquake anomaly Phase character

References

[1] M. Barranco and J. R. Buchler, *Phys. Rev.* **C34**, 1729 (1980).
H.Z. Xie, J.M. Tian and Y. Dong, Earthquake.Vol.20(supplement),2000.
[2] G.M. Zhang, Earthquake. Vol.22(1),2002.