

Groundwater macroscopic anomalies and earthquake: a case study in Xichang, South-west China

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Earthquake prediction is a debating topic in the world. One of the focused points is that whether there existed observable and identifiable precursors? What's the objective definition of "anomalies" and what's the quantitative physical mechanism links these precursors to earthquakes. However, anomalies are always reported before and after some major earthquakes. Identify the nature of these anomalies and understand the possible role as precursor will certainly benefit for the debating. Large scale macroscopic anomalies were reported in Xichang area during 2002. And we conducted a field survey in order to indentify the nature of these anomalies and their possible role as precursor. According our investigation, although the groundwater and animal anomalies have no relationship with the strong earthquake, they are surely controlled by the tectonic activity in that area. Because both of the temporally and spatially distribution of groundwater and animal anomalies had related with the tectonic setting and the tectonic activity which get from the seismo-geological and geodetic studies. So the anomalies in Xichang area are the result of the increasing tectonic activity in the Sichuan-Yunnan block. And the groundwater may play as good indicator for the activity in tectonic.

Keywords: macroscopic anomalies, groundwater, earthquake