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The Distributing Characteristic and its Elementary Interpretations of Coda Q_c of the Areas in Yunnan Province

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The coda-wave attenuation quality factor Q_c of the areas in Yunnan Province were estimated using the single-scattering attenuation model of Sato from 5668 local seismic events recorded by a regional network of 22 digital stations from the latter half of 1999 to 2003. The used events were in epicentral distances of up to 50 km. According as the variation of Q_0 and η, we classified the quality factor Q_c to two types. The classified results showed that there was regional distributing characteristic in medium structure of the areas in Yunnan Province, and this characteristic could be elementarily interpreted by geological structures, seismic activity and heat flow. Generally speaking, the quality factor Q_c of Dianzhong Block and its boundary area were notably less than those of other regions, as the intensity of tectonic activity of these areas. According to seismic activity, there were large earthquakes in the areas with lower Q_c, and there are few or only some little earthquakes at the areas with higher Q_c. Besides, there is negative relation between quality factor Q_c and heat flow of the areas in Yunnan Province, namely higher heat flow corresponding to lower Q_c and lower heat flow corresponding to higher Q_c.

Keywords: Coda Q_c Sato's single-scattering attenuation model Regional distribution

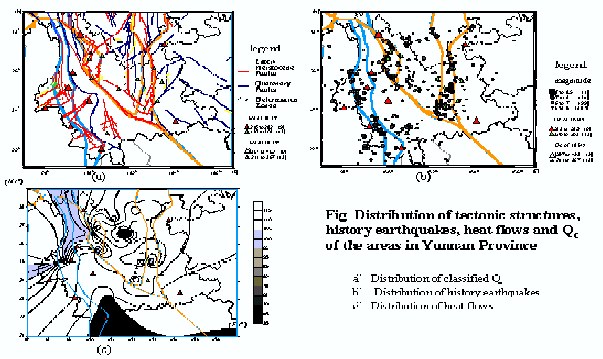

Fig. Distribution of tectonic structures, history earthquakes, heat flows and Q_c of the areas in Yunnan Province

a) Distribution of classified Q_c
b) Distribution of history earthquakes
c) Distribution of heat flows

References

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