

## **Change of Rb/Sr Ratios in the Luochuan Loess-Paleosol Sequence of Central China and their Climate-Stratigraphical Significance**

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Chinese climate is characterized by seasonal alterations of summer and winter monsoon. Loess deposits and intercalated paleosols on the Loess Plateau in central China provide a continuous proxy record of variations in East Asia monsoon climate. Concentrations of Rb and Sr, magnetic susceptibility have been measured from the Luochuan loess-paleosol sequence which is about 140m thick and spans the past 2.5 m.y. Similar to magnetic susceptibility, variations of Rb/Sr ratios obtained from the measurement are strictly coincident with the loess-paleosol cycles of the section, suggesting that this chemical parameter could also serve as an indicator for monsoon climatic change on the Loess Plateau. Although distribution of the Rb/Sr ratio and magnetic susceptibility along the whole profile show much similar pattern in both curve shape and phase transition, there are striking differences in their relative amplitude of variations. Change of Rb/Sr ratios confirms that 800 ka B.P. was an important boundary when monsoon climate changed sharply, which is conformed to the record of the deep-sea sediments. Variations of Rb/Sr ratios reveal some climatic subvariations in the loess-paleosol sequence which have not been recognized by the magnetic susceptibility.

Distribution of Rb/Sr ratios in the sequence also reflects that the climate on the Loess Plateau during early Pleistocene was warmer and moister than that has been considered on the basis of magnetic susceptibility analysis. So variations of Rb/Sr ratios in the sequence can be regarded as a sensitive indicator of East Asian monsoon strength.