EGU22-827
https://doi.org/10.5194/egusphere-egu22-827
EGU General Assembly 2022

Volcanic Sedimentary Rhythm Characteristics of Early Cretaceous Rhyolite Tuff in Lingshan Island, Eastern Shandong Province and its Indication to Magmatic Dynamic Process

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A set of rhyolitic tuff-mudstone interbedded rock outcrop with good rhythm is developed in the Yangjiaodong area of Lingshan Island, eastern Shandong Province. In order to research the causes of the rhythm formation of the reflected volcanic eruption magmatic dynamics process, the collected sample were analyzed by time-scale series. The analysis model sets the thickness of tuffaceous rhyolite layer of the sample to represent the eruption scale and the thickness of mud layer represents the dormant time of volcanism. Combined with the geological background of the study area, the parameter deposition rate is the deposition rate of volcanic back-arc basin (6.5 m / Ma) with insufficient source supply, and the mudstone compaction factor is 0.3. Based on this, the thickness of different lithology was counted, and the time span of the analyzed sample was calculated to be 2.24Ma. Using Acycle software for quantitative data interpolation, detrending, spectrum analysis, filtering and other processing, got four scale and four kinds of eruption mode. Finally, the scale-time diagram was analyzed, and matched with the melt activation rheological lock-up window to obtain the volcanic activity pulse eruption model, so as to predict the near-surface magma chamber dynamics process.