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川东北须家河组中铝土矿的发育特征及其对构造活动的响应

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摘要:

四川盆地晚三叠世诺里期与瑞替期(须三段与须四段)之间是否存在安县运动以及该运动的影响范围有多大,一直存在分歧。本次研究首先在川东北须家河组三段上部(即须三段与须四段之间)发现了沉积型铝土矿层的存在。通过镜下观察,地化、电子探针、扫描电镜以及X射线分析,认为:铝土矿以豆粒状产出状态为主,具豆粒结构、块状构造,豆粒间填充物以灰、灰黑色胶状、蠕虫状高岭石为主,其次为褐铁矿染的干净亮的放射状、球粒状菱铁矿,偶见闪锌矿;豆状铝土矿主要呈微-细晶粒状、鳞片状及絮状,其中,晶粒状、鳞片状铝土矿单偏光镜下无色、正交起,解理明显,正交偏光镜下呈二级兰干涉色,结合X射线分析,将其定名为一水硬铝石,其 $Al_2O_3$ 含量为85.022%~87.763%;测井曲线上,自伽玛异常增大,当密度接近于 $3g/cm^3$ 时,中子孔隙度值出现相对高值。表明须三段与须四段之间存在一次时间较长的沉积间断,佐证了安县运动的存在,同时也表明安县运动影响范围已远远超出了龙门山前缘地区,进入了盆地内部,甚至影响了整个四川盆地。

英文摘要:

Arguments on whether An'xian tectonic movement existed or not and on how widely its influence might range during Norian Period and Rhaetian Period of Late Triassic (between the 3<sup>rd</sup> and 4<sup>th</sup> member of Xujiache Formation) in Sichuan basin have existed for long time. This study, for the first time, found the sedimentary bauxite layer on the top of the 3<sup>rd</sup> member of Xujiache Formation (between the 3<sup>rd</sup> and 4<sup>th</sup> member of Xujiache Formation) in the northeast of Sichuan basin. On the basis of thin section, geochemical characteristics, electronic probe, SEM and X-ray etc., the bauxite mainly occurred as pisolitic with both pisolitic structure and block structure. The main components of interstitial material among pisolites are tremellooses and vermicular kaolinites. Also, clean bright radial and sphaerolitic siderite is present in small quantities with limonite dissemination and occasional sphalerite. The main pisolitic bauxite has 3 shapes, microgranular, flaky and floccus-like. Among these, crystalline and flaky bauxites are colorless, median processus, obvious cleavage under plane-polarized light. Under cross-polarized light, they bear second-order blue interference color. Combined with X-ray analysis, we define them diasporite ( $\alpha-AlO(OH)$ ) and the  $Al_2O_3$  content of them is 85.022%~87.763%. The logging curve shows that natural gamma increases abnormally and when the density curve is on the verge of  $3g/cm^3$ , the neutron porosity is relatively high. The findings support the argument that there was a long sedimentary intermission between the 3<sup>rd</sup> and 4<sup>th</sup> member of Xujiache Formation and give evidence for the existence of the An'xian tectonic movement. Moreover, the study also points out that the influenced area by the An'xian tectonic movement is far beyond the Longmenshan front area, it turns into the interior of the basin, even affects the whole Sichuan basin.

关键词: [铝土矿](#) [安县运动](#) [须家河组](#) [川东北](#)

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