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# 青藏高原盐湖水化学及其矿物组合特征

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摘要:

青藏高原湖泊的矿化度与其湖泊演化所处的自然环境,特别是与气候条件关系密切,根据取得盐湖数量和间上变化的总趋势是由北、西北向南、东南趋向下降,大体上与现代高原年干燥度(年蒸发量/年降水量)呈同化学类型有关,又与湖水矿化度有关,即由碳酸盐型→硫酸钠亚型→硫酸镁亚型→氯化物型,其pH值趋于下降,相关。根据库尔纳可夫—瓦良什科分类法及作者对碳酸盐型的细分,对青藏高原盐湖水化学进行了全面细致划分识:本区盐湖水化学具有南北分带,东西分区的特点。不同的盐湖水化学类型,具有不同的专属性,碳酸盐型代砂)或硼砂—扎布耶石,以及碱—芒硝组合;硫酸钠亚型代表性成矿组合为芒硝(无水芒硝)—石盐以及镁硼酸等)—钠硼解石—芒硝;硫酸镁亚型代表性成矿组合为硫酸镁盐(泻利盐、白钠镁矾)—石盐、镁硼酸盐—芒硝量石膏;氯化物型代表性成矿组合则为光卤石—水氯镁石—石盐、光卤石—石盐,个别盐湖共生南极石。由此可合基本上具有冷相组合特征,芒硝及与其共生的冷相盐类矿物,可成为研究古气候变化的重要标志物。目前已检素,其中B与Li、Cs、K、Rb有密切共生关系,其含量随湖水矿化度增长大致呈正相关;B、Li、Cs、K、Rb最高正 2 )西段—昂拉陵湖区为中心地区;并与本区中新世火山沉积岩系和地热水B、Li、Cs、Rb等高值区并行不悖殊元素物质与深部来源有关。据近期大量地球物理和火山岩岩石地球化学研究,其成因与印度—欧亚陆陆碰撞引系。南美科迪勒拉高原硼锂(铯)盐湖即生成于活动大陆边缘,两者均说明全球特定的活动构造带是造成天然水成矿作用的主因。

关键词:青藏高原 盐湖 水化学类型分带 盐湖矿物组合 硼,锂,钾,铯,铷 物质来源

# Hydrochemistry and Minerals Assemblages of Salt Lakes in the Qinghai Tibet Plateau,

Fulltext

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Fund Project:

Abstract:

The salinity of the lakes of the plateau is closely related to the natural environment of la climatic conditions. According to the available data and interpretation of satellite images, the plateau has a general trend of decreasing from north and northwest to south and southeast, broadl variations with the annual precipitation and aridity (annual evaporation/annual precipitation) of values of the plateau salt lakes are related to both hydrochemical types and salinities of the lak values tend to decrease from the carbonate type → sodium sulfate subtype → magnesium sulfate sul meanwhile, a negative correlation is observed between the pH and salinities of the lakes. Accordi classification and author ' s subclassifing for carbonate type, a complete and meticulous hydr the salt lakes of the plateau has been made and then a clear understanding of the N S hydrochemica hydrochemical differentiation has been obtained. There is a genetic association between certain sa salt lake hydrochemical types: the representative mineral assemblages of the carbonate type of sa (tincalconite) and borax zabuyelite (Li 2 CO 3 ) and alkali carbonate mirabilite; the re assemblages of the sodium sulfate subtype are mirabilite (thenardite) halite and magnesium borate etc.) ulexite mirabilite; the representative mineral assemblages of the magnesium sulfate subtyp (epsomite, bloedite) halite, magnesium borate mirabilite, and mirabilite schoenitehalite, as w gypsum; The representative mineral assemblages of the chloride type are carnallite bischofite ha with antarcticite in a few individual salt lakes. The above mentioned salt lake mineral assembla plateau have features of cold phase assemblages. Mirabilite and its associated coldphase saline m indicators for the study of paleoclimate changes of the plateau. A total of 59 elements have been the plateau currently, of which the B is intimately associated with Li, Cs, K and Rb and its conc positive correlation with increasing salinity of the lake waters. The highest positive anomalies the Ngangla Ringco Lake area in the western segment of the southern Qiangtang carbonate type subz with Miocene volcanic sedimentary rocks and high value areas of B, Li, and Cs of the plateau. Th that special elements such as B, Li, and Cs on the plateau were related to deep sources. Based on geophysical study and geochemical study of volcanic rocks, their origin had close genetic relation resulting from India-Eurasia continent-continent collision, and B Li (Cs) salt lakes in the Cordi America just originated on active continental margins, both of which indicate that global specifi are the main cause for the high abundances of B, Li, and Cs (K and Rb) in natural water and miner