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## Ordovician Seawater Composition: Evidence from Fluid Inclusions in Halite

MENG Fanwei<sup>1,2</sup>, ZHANG Yongsheng<sup>3</sup>, Galamy A.R.<sup>4</sup>, XING Enyuan<sup>3</sup>, NI Pei<sup>5\*</sup> and JI Limin<sup>6</sup>

1. State Key Laboratory of Palaeobiology and Stratigraphy, Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences, Nanjing, China

2. Guangzhou Institute of Geochemistry, Chinese Academy of Sciences, Guangzhou, China

3. Chinese Academy of Geological Sciences, Beijing, China

4. Institute of Geology and Geochemistry of Combustible Minerals, NAS of Ukraine, Lviv, Ukraine

5. State Key Laboratory for Mineral Deposits Research, Institute of Geo-Fluid Research, Department of Earth Science, Nanjing University, Nanjing, China

6. Lanzhou Institute of Geology, Chinese Academy of Sciences

Fluid inclusions in halite can directly record the major composition of seawater, however Ordovician halite is very rare. Ordovician is a key time during the evolution history. However there are no Ordovician seawater data reported except from the data from the halite from the boundary of Ordovician and Silurian.  $\text{Ca}^{2+}$  and  $\text{Mg}^{2+}$  concentration were determined in brines from large secondary inclusions, located on periphery of the chevron. In brine from the first inclusion the  $\text{Ca}^{2+}$  content was 87.9 and 75.8 g/l (81.9 g/l in average). In this study, we report the major compositions from middle Ordovician halite in China. Ordovician fluid inclusions give the direct evidence that the Ordovician seawater is Ca-rich seawater of calcite sea, with the Na–K–Mg–Ca–Cl type seawater composition (Kovalevich et al., 1998; Lowenstein et al., 2001), while late-stage potash salts in marine evaporates is the KCl types (Hardie, 1996).

**Key words:** Ordovician, seawater composition, fluid inclusion, halite

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\* Corresponding author. E-mail: peini@nju.edu.cn