

Abstract Submitted  
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**Thermal transport study of  $S = 1/2$  kagome frustrated system Volborthite** DAIKI WATANABE, Kyoto University, MINORU YAMASHITA, MASAOKI SHIMOZAWA, YOSHITAKA SUZUKI, HAJIME ISHIKAWA, ZENJI HIROI, ISSP, University of Tokyo, YUJI MATSUDA, Kyoto University — The nature of spin liquid states of 2D frustrated magnetic systems has been discussed over decades. Recently, some candidate materials of 2D quantum spin liquid have been reported from the absence of long range order in low temperatures. However, the elementary excitations which characterize the ground state have yet to be observed. It is suggested that thermal Hall measurement is a powerful probe to identify the elementary excitations of 2D quantum spin liquids[1]. Here we report the results of thermal-transport measurements of Volborthite ( $\text{Cu}_3\text{V}_2\text{O}_7(\text{OH})_2 \cdot 2\text{H}_2\text{O}$ ) which possesses the 2D kagome planes. We observed double anomalies in the thermal conductivity around 1K. These anomalies correspond magnetic orderings reported by the NMR measurements and the specific heat measurements[2,3]. We will also talk about our thermal Hall measurements above the ordering temperature. [1] H. Katsura *et al.*, Phys. Rev. Lett. **104**, 066403 (2010). [2] H. Yoshida *et al.*, Nat. Commun. **3**, 860 (2012). [3] M. Yoshida *et al.*, J. Phys. Soc. Jpn. **81**, 024703 (2012).

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