

(※本報告書は英語で記述してください。ただし、産業利用課題として採択されている方は日本語で記述していただいても結構です。)

 MLF Experimental Report	提出日 Date of Report
課題番号 Project No. 2014A0183 実験課題名 Title of experiment INVESTIGATION OF THE MAGNETIC TRANSITION IN TWO NEW QUANTUM-SPIN SYSTEMS OF SPIN-TRIANGULAR CU(OD)CL AND SPIN-TETRAHEDRAL K4CU4CL100 実験責任者名 Name of principal investigator Xu-Guang Zheng 所属 Affiliation Saga University	装置責任者 Name of responsible person Shuki Torii 装置名 Name of Instrument/(BL No.) BL08 実施日 Date of Experiment 2014. 11.14-11.21

試料、実験方法、利用の結果得られた主なデータ、考察、結論等を、記述して下さい。(適宜、図表添付のこと)
 Please report your samples, experimental method and results, discussion and conclusions. Please add figures and tables for better explanation.

1. 試料 Name of sample(s) and chemical formula, or compositions including physical form. Cu(OD)Cl in powder
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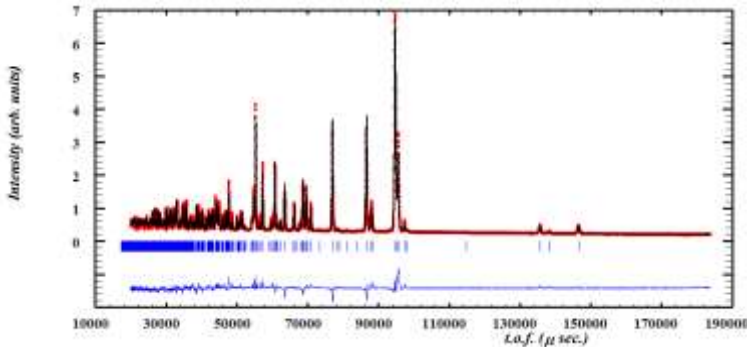
2. 実験方法及び結果 (実験がうまくいかなかった場合、その理由を記述してください。) Experimental method and results. If you failed to conduct experiment as planned, please describe reasons. We performed powder neutron diffraction using the SuperHRPD beamline to clarify the magnetic transition in the spin-triangular CuODCl. First, we obtained the diffraction pattern at 30 K as shown in Fig. 1, from which we determined the crystal structure.  <div style="float: right; text-align: right;"> $P121/a1$ $R_p = 6.24$ $R_{wp} = 7.64$ $R_{exp} = 1.66$ $\chi^2 = 21.1$ </div>
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Fig.1 The diffraction pattern at 30 K for CuODCl.

2. 実験方法及び結果(つづき) Experimental method and results (continued)

Then we successfully obtained its magnetic reflections at 5 K, as shown in Fig. 2.

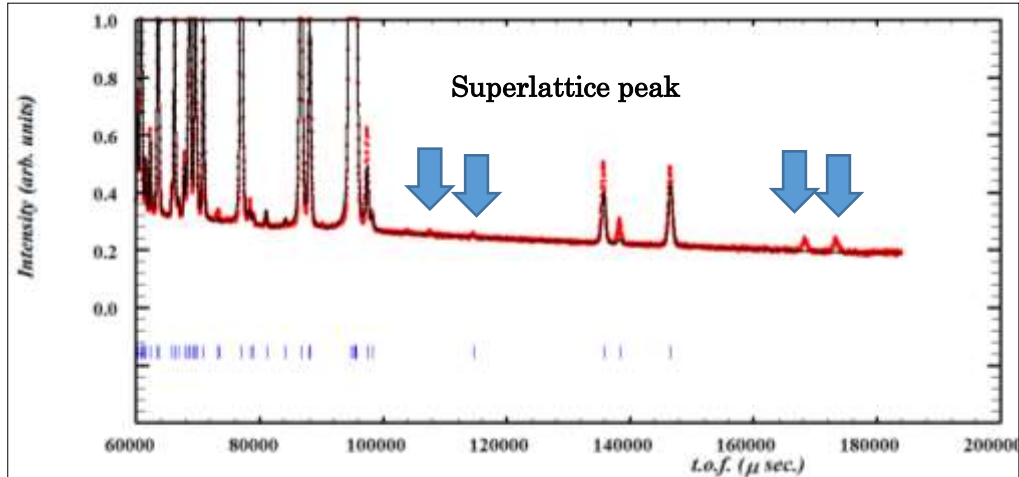


Fig.2 The diffraction pattern at 5 K for CuODCl showing the emerged magnetic reflections.

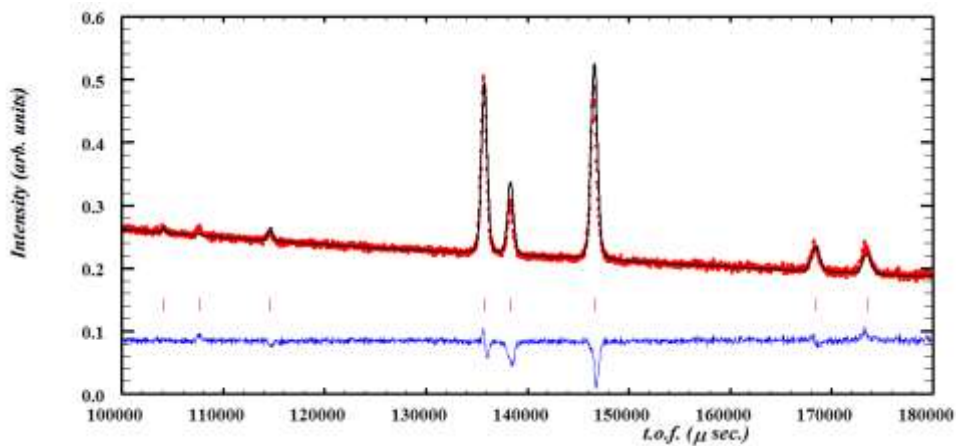


Fig.3 The diffraction pattern and fitting result for CuODCl.

The magnetic structure was successfully fitted as demonstrated in Fig. 3. Paper for submission is being prepared.