

## Ultrasound Studies on $\text{Cs}_2\text{CuBr}_2$

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### Introduction

A quasi-two dimensional antiferromagnet  $\text{Cs}_2\text{CuBr}_4$  is a frustrated spin system with a distorted triangular lattice. Quantum-fluctuation-assisted  $1/3$  magnetization plateau was observed in this material in magnetic field about 14T and temperature  $T < T_N = 1.4\text{K}$  and therefore field-induced incommensurate–commensurate transitions occur at both ends of the plateau [1]. Ultrasonic experiments never have been performed on frustrated spin systems. In this project we performed a first attempt to study interaction of ultrasound waves with the quantum fluctuations and the ultrasound velocity and attenuation in the vicinity of the transitions.

### Experimental

Measurements were performed by the pulse – echo technique in magnetic fields of up to 18T at temperature 0.3K (in SCM2 system).

### Results and Discussion

The signals observed at low temperature were noisy and magnetic field dependencies were non-reproducible most likely due to microcracks appeared in this fragile material.

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### References

- [1] Ono, T., *et al.*, J. Phys.: Condens. Matter **16** (2004) S773.