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## **【184】 The sound of the Q-phase in CeCoIn<sub>5</sub> - an ultrasound investigation**

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CeCoIn<sub>5</sub> is an intriguing d-wave superconductor with intertwined orders. A spin density wave exists only inside the superconducting phase [1], implying that superconductivity is an essential ingredient for the magnetic Q-phase. Its origin remain under debate. Since phonons couple to the electronic structure at MHz frequencies [2], ultrasound is suitable to investigate the properties of the Q-phase. Here we investigate the response of elastic constants and attenuation of different modes under rotating magnetic fields.

The ultrasound technique is being developed at the PSI. We present our route to establish the technique using a data acquisition card and digital processing.

[1] M. Kenzelmann et al, Science 321, 186-197 (2008).

[2] T. Watanabe et al, Phys. Rev. B 70, 020506(R) (2004).

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