

# Experimental report

15/09/2019

**Proposal:** 4-02-468

**Council:** 4/2016

**Title:** Magnetic fields and the spin fluctuations in CeRhSi<sub>3</sub> & #8211; Field induced spin resonance and possible analogy to YbRh<sub>2</sub>Si<sub>2</sub>

**Research area:** Physics

**This proposal is a new proposal**

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**Samples:** CeRhSi<sub>3</sub>

Instrument	Requested days	Allocated days	From	To
IN12	7	6	17/11/2016	23/11/2016

## Abstract:

The proposal requests 7 days to study the magnetic field dependence of the spin fluctuations in CeRhSi<sub>3</sub> on IN12. Recent momentum surveys have found that the fluctuations are located near ferromagnetic positions and cross over to incommensurate momentum positions with decreasing temperature. The situation is analogous to YbRh<sub>2</sub>Si<sub>2</sub> where a field induced resonance has been observed. Motivated by this unusual discovery in YbRh<sub>2</sub>Si<sub>2</sub>, we propose to investigate the field dependence of the spin fluctuations in CeRhSi<sub>3</sub> to search for similar responses. IN12 is required for this experiment as we need long wavelengths (and good energy resolution) and in particular to be below the Bragg cutoff for Al to avoid background from the sample mount.

Please see Phys. Rev. B 99, 125144 (2019).