

# Experimental study of GdW10 and GdW30 molecular magnets

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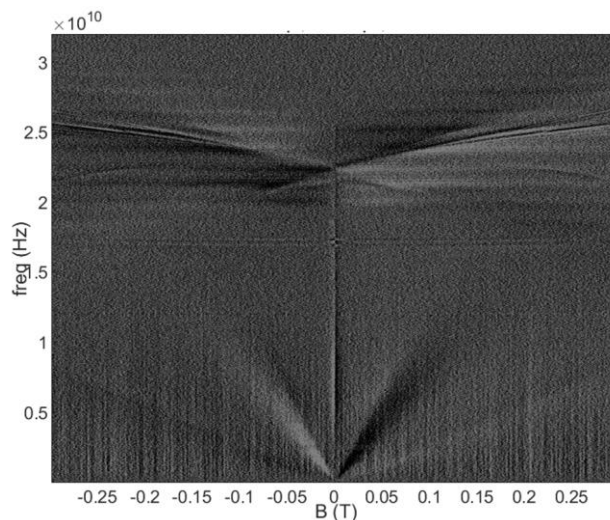
Single-molecule magnets such as GdW10 and GdW30 are promising spin qubit candidates [1].

Here we explore experimentally the field dependent transitions in these materials via VNA-FMR experiments [2,3] at different temperatures and compare our result to theoretical predictions based on the Hamiltonian of the crystal. These experiments allow us to develop a technique to interact with these molecules, aiming to integrate them in hybrid quantum systems through their interactions with superconducting microwave cavities or magnons.

## References

- [1] M.J. Martínez-Pérez et al., Phys Rev Lett, (2012) 108(24):247213
- [2] I. Gimeno et al., ACS Nano, 14, 7(2020) 8707-8715
- [3] S. Martínez-Losa del Rincon et al., Phys. Rev. Applied, 19, 014002 (2023)

## Figures



**Figure 1:** FMR spectrum measured for one GdW<sub>10</sub> crystal at 60mK. The first few allowed level transitions are easily distinguished around 20-27GHz.