Tuning the electronic properties of novel Kagome superconductors $AV_3Sb_5$

Crystal structure and (P,T) phase diagram of $AV_3Sb_5$ superconductors [2]. Single crystals synthetized at IQMT (Dr. A. A. Haghighirad)

- In 2020 a new family of Quantum Materials with Kagome crystal structure was discovered [1]. It was rapidly found to display highly tunable charge density wave (CDW) and superconducting orders [2].
- It constitutes one of the most original and promising platform for studying the interplay between geometric frustration, topology and electronic correlations in Quantum Materials.
- First 'european' single crystals synthetized at IQMT (Dr. A. A. Haghighirad)

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Possible master theses work at IQMT:

- Growth, structural and electronic characterization of new types of Kagome superconductors (doped materials)

- Effect of uniaxial pressure on the electronic properties of the Kagome superconductors studied by combination of low temperature x-ray diffraction, inelastic light scattering and transport experiments

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