



Workshop on Correlated and Topological States in Kagome Metals

Quantum Foundry, UCSB

October 18 – 21, 2021

Times are in California local time

Day 1: Monday, October 18, 2021

Morning Session: "AVS-I"

8:00 – 8:40: Stephen Wilson, "AV₃Sb₅ (A=K, Rb, Cs): A new class of topological kagome metals hosting charge density wave order and superconductivity"

8:40 – 9:20: Zahid Hasan, "Discovery of novel quantum phenomena in kagome materials including superconductors"

9:20 – 9:50 Break

9:50 – 10:30: Mazhar Ali, "KV₃Sb₅ and friends: an outlook on an extraordinary platform for emergent physics"

10:30 – 11:10: Brenden Ortiz, "Fermi surface mapping and phase relations in kagome superconductor CsV₃Sb₅"

11:10 – 11:50: Ilija Zeljkovic, "Nanoscale imaging of symmetry-broken electronic phases in kagome metals AV₃Sb₅"

Afternoon Session: "AVS-II"

2:00 – 2:40 Leon Balents, "Competing density waves in kagome metals"

2:40 – 3:20 Binghai Yan, "Charge density waves and electronic structure of Kagome superconductors "

3:20 – 4:00 Qimiao Si, "Electron correlations in topological kagome metals"

4:00 – 4:30 Break

4:30 – 5:10 Hechang Lei, "Superconductivity and magnetism in topological kagome metals"

5:10 – 5:50 Shiyang Li, "Nodal superconductivity and superconducting domes in the topological Kagome metals AV₃Sb₅"

5:50 – 6:30 Zhenyu Wang, "Charge density wave and possible Majorana zero modes in kagome superconductor CsV₃Sb₅"

Day 2: Tuesday, October 19, 2021

Morning Session: "AVS-III"

8:00 – 8:40: Huiqiu Yuan, "Nodeless superconductivity and its interplay with charge order in the Kagome metals AV_3Sb_5 "

8:40 – 9:20: Li Yu, "Spontaneous time reversal symmetry breaking in topological Kagome superconductor CsV_3Sb_5 observed by muon spin relaxation technique"

9:20 – 9:50 Break

9:50 – 10:30: Zurab Guguchia, "Muon spin rotation insight into kagome superconductors"

10:30 – 11:10: Ronny Thomale, "Unconventional density wave order and superconductivity in kagome metals"

11:10 – 11:50: Rahul Nandkishore, "Theoretical analysis of charge density wave instabilities in kagome metals"

Afternoon Session: "AVS – IV"

2:00 – 2:40: John Harter, "Coherent phonon spectroscopy and interlayer modulation of charge density wave order in CsV_3Sb_5 "

2:40 – 3:20: Hu Miao, "Nature of the CDW in AV_3Sb_5 : a lattice perspective"

3:20 – 4:00: Girsh Blumberg, "CDW state in AV_3Sb_5 from optics perspective"

4:00 – 4:30 Break

4:30 – 5:10: Kun Jiang: "Time-reversal symmetry breaking and flux phase in AV_3Sb_5 "

5:10 – 5:50: Junfeng He: "Electronic structure of kagome superconductors"

5:50 – 6:30: Hai-Hu Wen: "Twofold symmetry of superconductivity and normal state properties in the kagome superconductor CsV_3Sb_5 "

Day 3: Wednesday, October 20, 2021

Morning Session: "Kagome Magnets - I"

8:00 – 8:40: Shancai Wang, "Typical electronic structure of the Kagome metals"

8:40 – 9:20: Changan Zeng, "Flat band, magnetism, and topological properties of kagome lattices"

9:20 – 9:50 Break

9:50 – 10:30: Haim Beidenkopf, "Correlated and topological quantum phases visualized in a transition metal dichalcogenide compound"

10:30 – 11:10: Joe Checkelsky, "Flat Bands and Correlated Metallic States in Kagome Metals"

11:10 – 11:50: Pengcheng Dai, “Magnetic order, spin excitations, and phonon anomaly in Kagome metals”

Afternoon Session: “Kagome Magnets – II”

2:00 – 2:40: Vidya Madhavan, “STM evidence for linearly dispersing chiral edge states in $\text{Co}_3\text{Sn}_2\text{S}_2$ ”

2:40 – 3:20: Jia-Xin Yin, “From kagome magnet to magnetic kagome superconductor”

3:20 – 4:00: Nirmal Ghimire, “Electronic and magnetic topological states in YMn_6Sn_6 ”

4:30 Beach barbecue

Day 4: Thursday, October 21, 2021

Morning Session: “AVS-V”

8:00 – 8:40: Hong-Jun Gao, “Roton pair density wave in a strong-coupling kagome superconductor”

8:40 – 9:20: Ziqiang Wang, “Topological pair density wave superconductors on the kagome lattice”

9:20 – 9:50 Break

9:50 – 10:30: Ece Uykur, “Nanoscale imaging of symmetry-broken electronic phases in kagome metals AV_3Sb_5 ”

10:30 – 11:10: Sergey Borisenko/Rui Lou, “CDW and superconductivity in CsV_3Sb_5 from ARPES electronic structure”

11:10 – 11:50: Ming Shi/Yong Hu, “Rich Nature of Van Hove Singularities in kagome Superconductor CsV_3Sb_5 ”

Afternoon Session: “AVS-VI”

2:00 – 2:40: Riccardo Comin, “Twofold van Hove singularity in topological kagome superconductor CsV_3Sb_5 ”

2:40 – 3:20 : Ni Ni, “Revealing the competition between charge-density-wave and superconductivity in CsV_3Sb_5 through uniaxial strain”

3:20 – 4:00: Rafael Fernandes, “Theory of the charge-density wave in kagome metals”

4:00 – 4:40: Chandra Varma, “Theory and Experiments with Loop-currents: A Conference Summary”