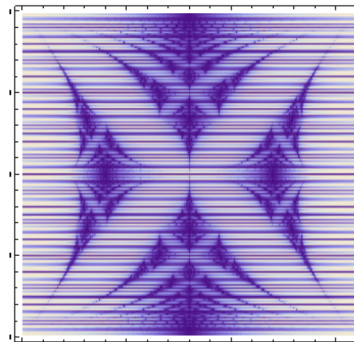
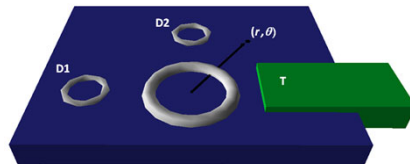
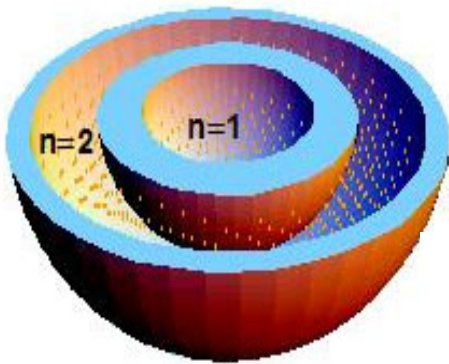
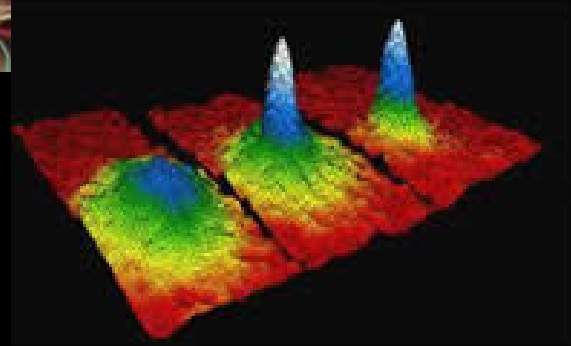
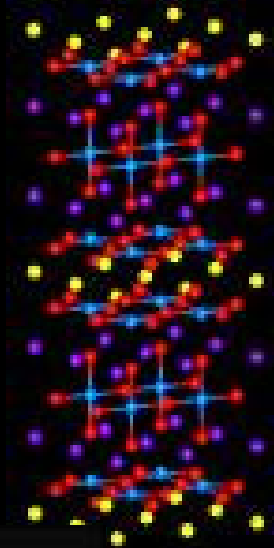
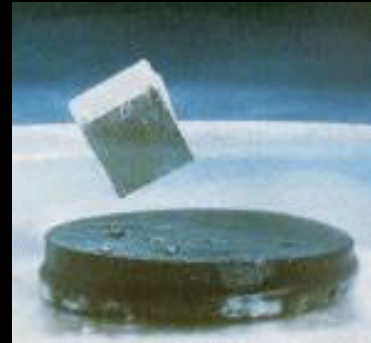


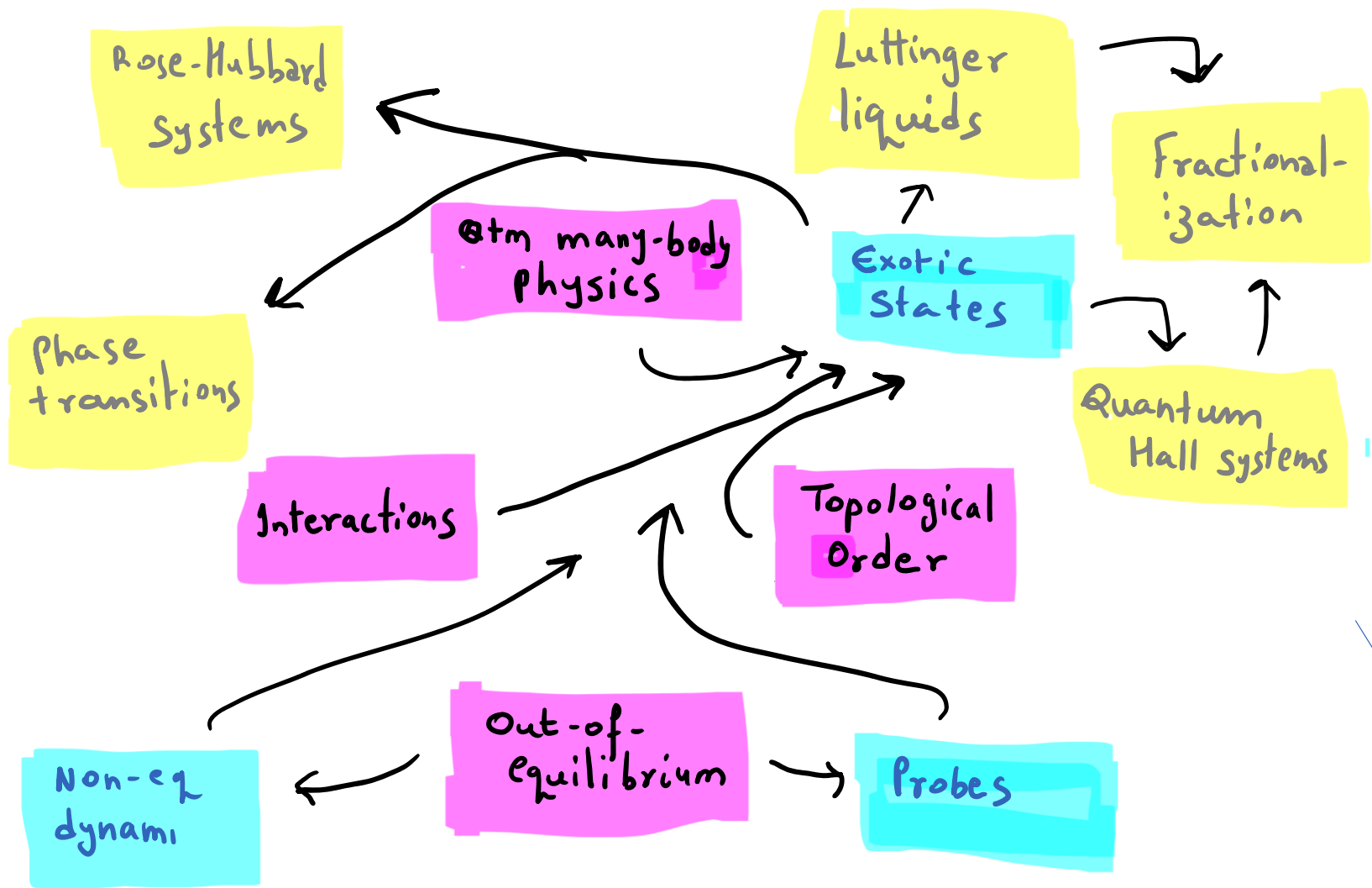
Quantum condensed matter : Topological systems, quantum wires, fractionalization, non-equilibrium dynamics, and more...

Research of Smitha Vishveshwara's group
(2013-2016)



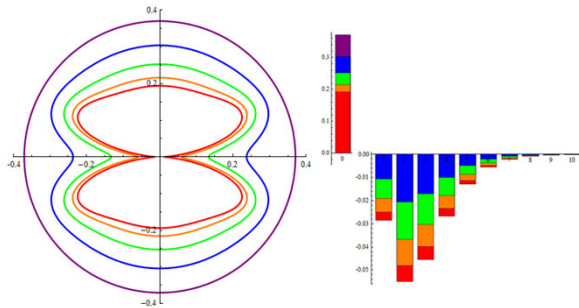
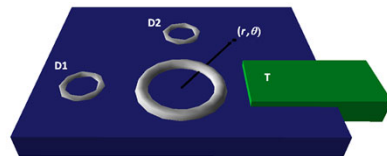
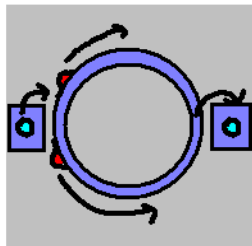
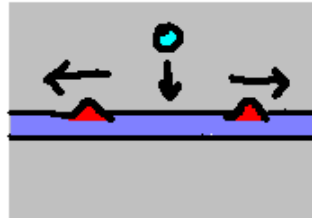
Condensed Matter Physics





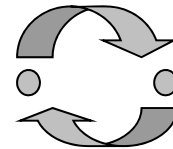
Fractionalization in low-dimensions

Charge frac. in Luttinger liquids



Thin ring geometries

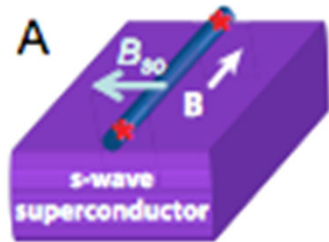
Quantum Hall Systems



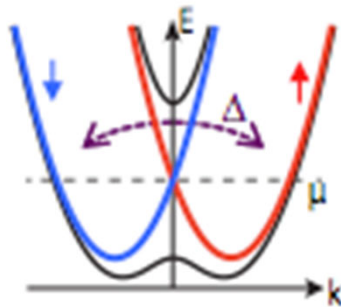
$$\psi(\vec{r}_1, \vec{r}_2) = e^{\pm i\pi\alpha} \psi(\vec{r}_2, \vec{r}_1)$$

Hunting of the Anyons

Topological order, superconductors



Majorana bound states

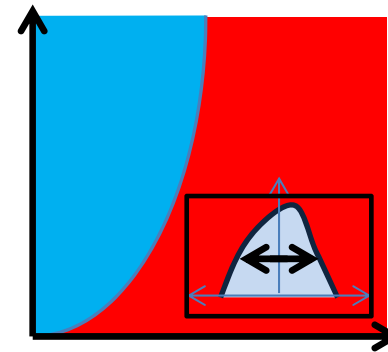
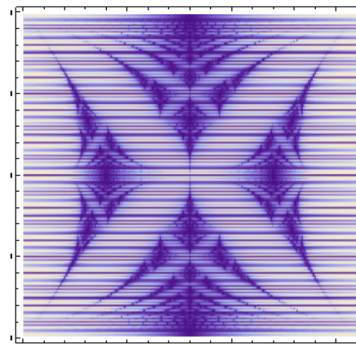


Wade DeGottardi
Now at Argonne JQI



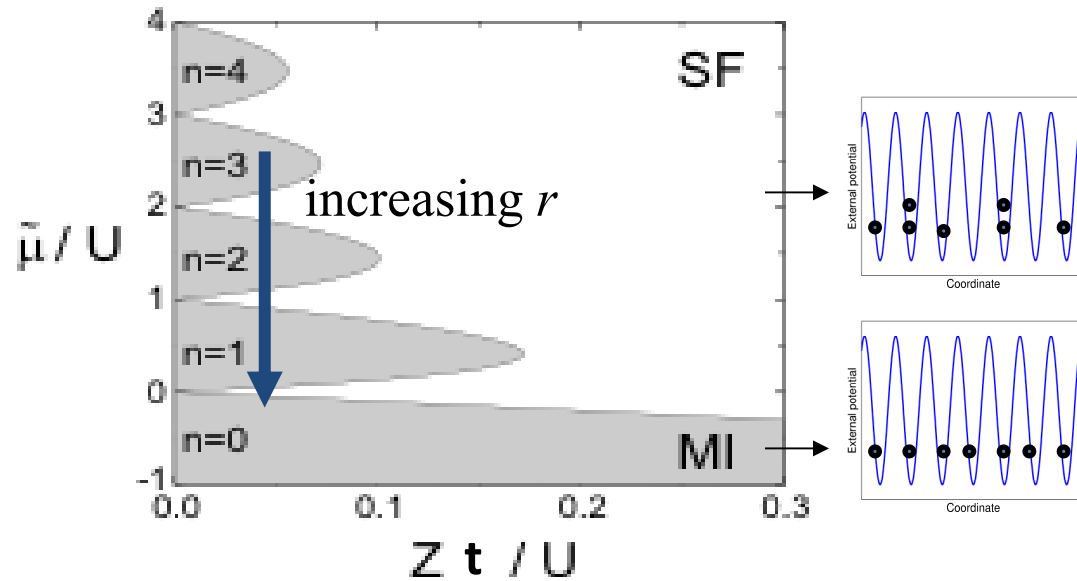
Suraj Hegde

Phase diagrams
for topological
superconductivity

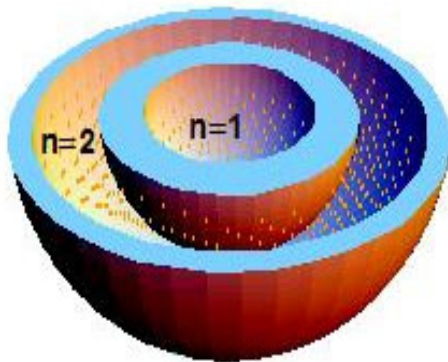


Cold atomic gases

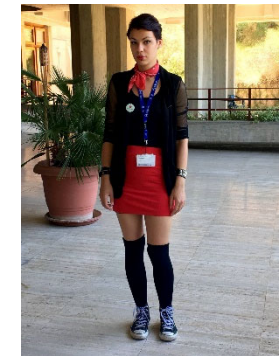
Bose-Hubbard Systems



Kuei Sun
Now at U. T. Dallas

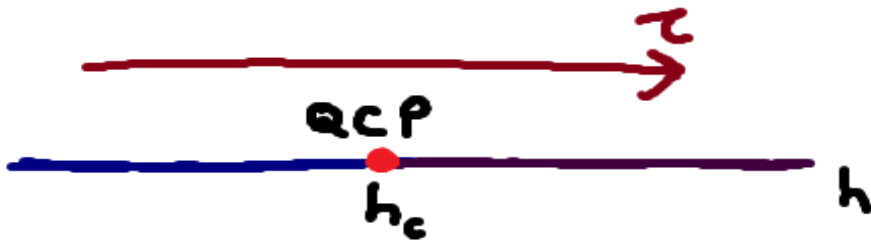


**Coexistence of phase in
trapped geometry;
Physics of superfluid shells**

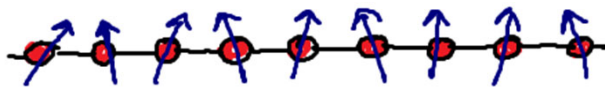
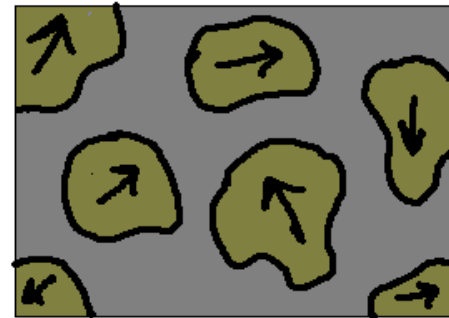


Karmela Padavic

Quench dynamics across phase transitions



'Kibble-Zurek' physics of defect formation



In spin chains and topological superconductors

Techniques, tools and more

- Advanced analytic quantum condensed matter techniques
- Quantum field theory, mean-field, Luttinger, anything that works....
- Basic numerical techniques
- Collaboration with experimentalists!



Current Group

- Graduate Students: Suraj Hegde, Karmela Padavic
- ICMT Postdocs: Awadhesh Narayan, Luiz Santos, Yuxuan Wan
- Collaborations with multiple groups

At least one more graduate student position open

Quantum condensed matter : Topological systems, quantum wires, fractionalization, non-equilibrium dynamics, and more...

Research of Smitha Vishveshwara's group

smivish@illinois.edu

