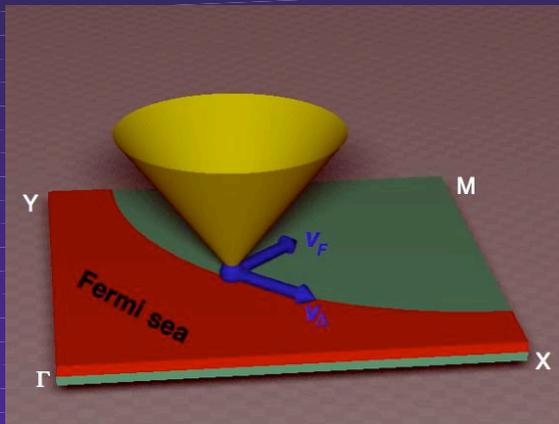


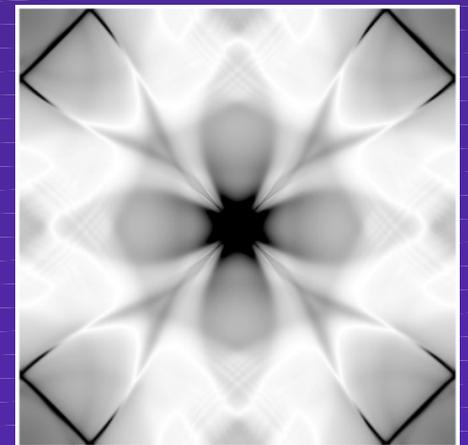
High-temperature superconductivity, exotic states of quantum matter, topological quantum computation

Marcel Franz



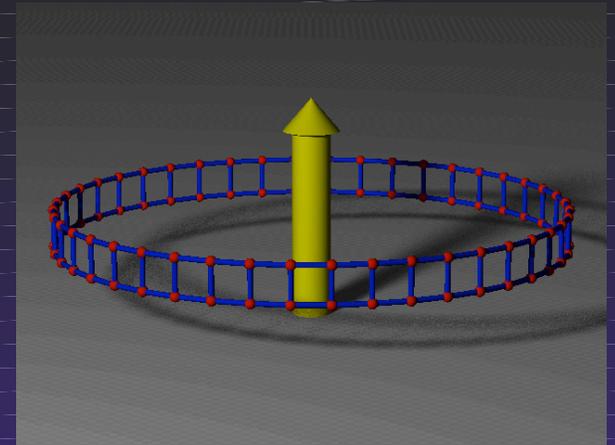
What does my group do? In the past few years we worked on several theoretical models aimed at understanding the physics of high- T_c cuprate superconductors.

I have developed the "QED3 theory" of the pseudogap state which is based on the idea that quantum and thermal fluctuations in the superconducting order parameter phase underlie much of the unusual physics observed in these materials.

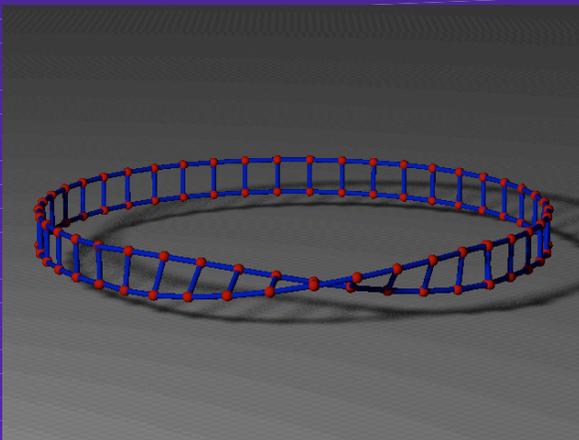


What are my current interests and plans?

- Exotic states of correlated electron matter
- Topological order and quantum number fractionalization
- Some aspects of ultracold atom gasses
- Topological quantum computation



I am interested in phenomena that fall outside of existing paradigms and can be potentially observed in experiment.



How would the center benefit my research?

I hope the center would attract a steady stream of visitors, both experimental and theoretical and would help funding postdoctoral fellows and associates in areas of my immediate interest.

