I thank my supervisors Professor Tim Wehling and Professor Annica Black-Schaffer

I thank Niklas, Ankita, Quentin

as the whole groups 'Computational Condensed Matter Theory' in Hamburg and 'Quantum Matter Theory' in Uppsala for welcoming me into their open and productive atmosphere.

I owe thanks to all developers of free software, especially the ones I used in this thesis: LATEX, Python, Numpy, Scipy, Matplotlib, Git.

I thank my family for support through my all my studies up until now.

I especially thank Liv for massive amounts of love and support.