Stellingen

behorende bij het proefschrift

On topological properties of superconducting nanowires

1. There exist sharp topological transitions in finite systems. Chapter 2

2. Weak localization of electrons is not destroyed by a magnetic field in the presence of a superconductor. Chapter 4

3. The $4\pi$-periodic Josephson effect leaves signatures in the critical current. Chapter 6

4. Commonly used relaxation-time approximation for the solution of the Boltzmann equation can give the wrong sign for the Nernst coefficient. Chapter 7

5. The puzzling insensitivity of the quantum spin Hall effect to a perpendicular magnetic field, observed experimentally, can be explained as a disorder effect.


6. Real eigenvalues of real matrices have the same statistics as energy levels at a metal-insulator transition.


7. Bogoliubov quasiparticles are Majorana fermions.

8. Majorana bound states can be confined by a gate electrode at the edge of a quantum spin Hall insulator.


9. In many cases overconfidence is more profitable than rational behaviour.

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