

**Document Version**

Final published version

**Citation (APA)**

ten Haaf, S. L. D. (2026). *Majoranas can be lonely: Engineering the Kitaev chain in a two-dimensional electron gas*. [Dissertation (TU Delft), Delft University of Technology]. <https://doi.org/10.4233/uuid:fbf5ce51-595a-4ddf-b862-d6c71f1a016b>

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# Propositions

accompanying the dissertation

## **MAJORANAS CAN BE LONELY**

ENGINEERING THE KITAEV CHAIN IN A TWO-DIMENSIONAL ELECTRON GAS

by

**Sebastian Laurs Daniël TEN HAAF**

1. Finite-bias conductance spectra are sufficient to confirm the successful implementation of a two-site Kitaev chain (*pertains to Chapter 5*).
2. Rapid control over quantum dot chemical potentials will enable the physical braiding of Majorana quasiparticles in quantum dot - superconductor arrays (*pertains to Chapter 6*).
3. Topology is elegant and theoretically attractive, but distracts from assessing experimentally relevant properties in real, finite-sized systems.
4. Discussing failed or inconclusive experiments should play a more prominent role in a PhD thesis, to encourage a healthier scientific culture and learn from negative results.
5. Quantum computing has potential to positively impact climate change, but not before irreparable environmental damage has already occurred.
6. The long-term damage to public trust caused by bold press releases - such as claims of 'opening wormholes' or 'creating topoconductors' - outweighs the short-term benefits.
7. To curb online radicalisation, social media influencers must be held to the same ethical standards as traditional television and radio broadcasters.
8. Introducing dance as part of Dutch childhood education will help foster broader social cohesion.
9. The supply of company names containing the letter 'Q' will be exhausted before the first utility-scale quantum computer is built.

These propositions are regarded as opposable and defensible, and have been approved as such by the promotor Prof. dr. M.T. Wimmer and copromotor Dr. S. Goswami.