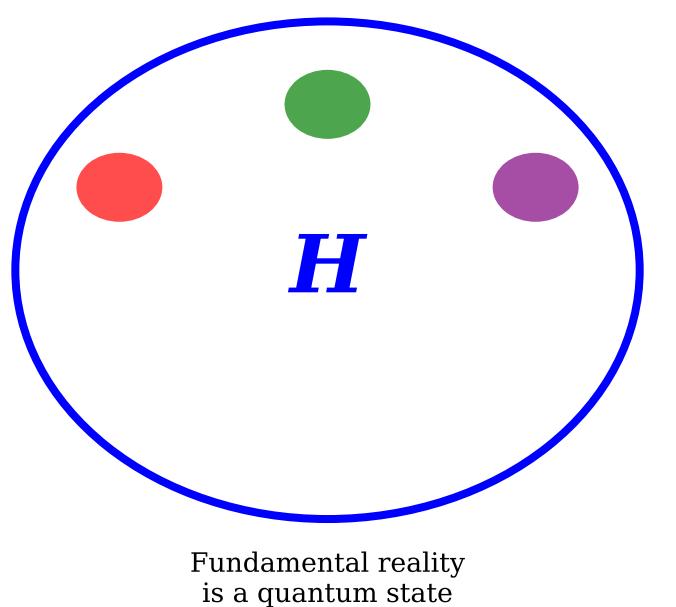
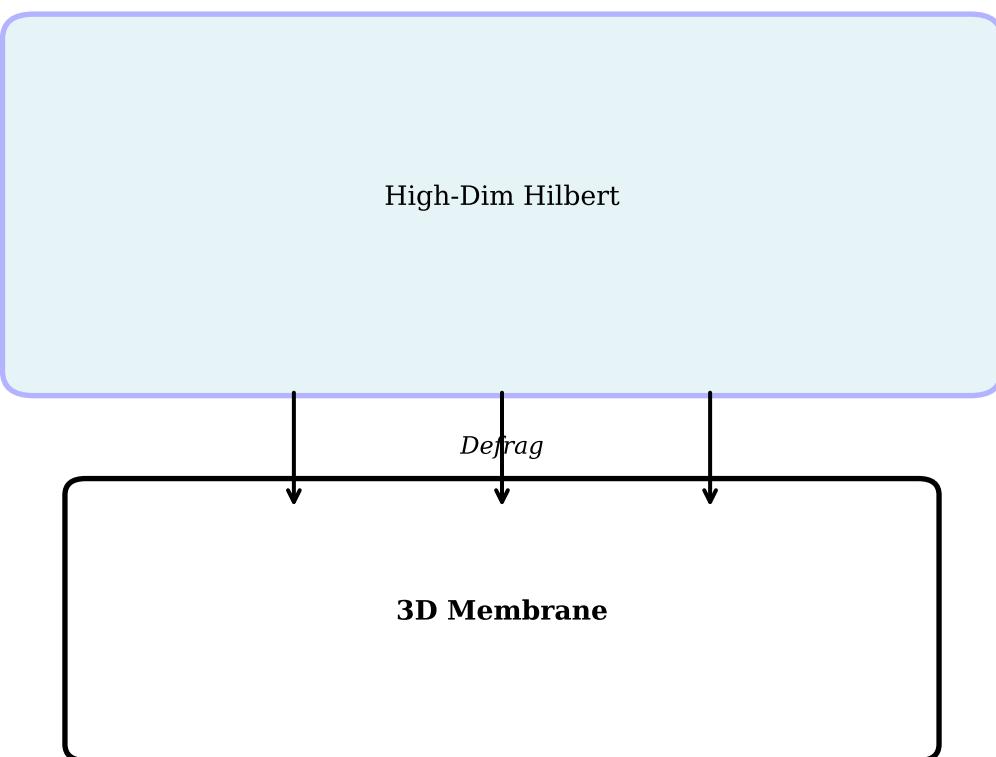


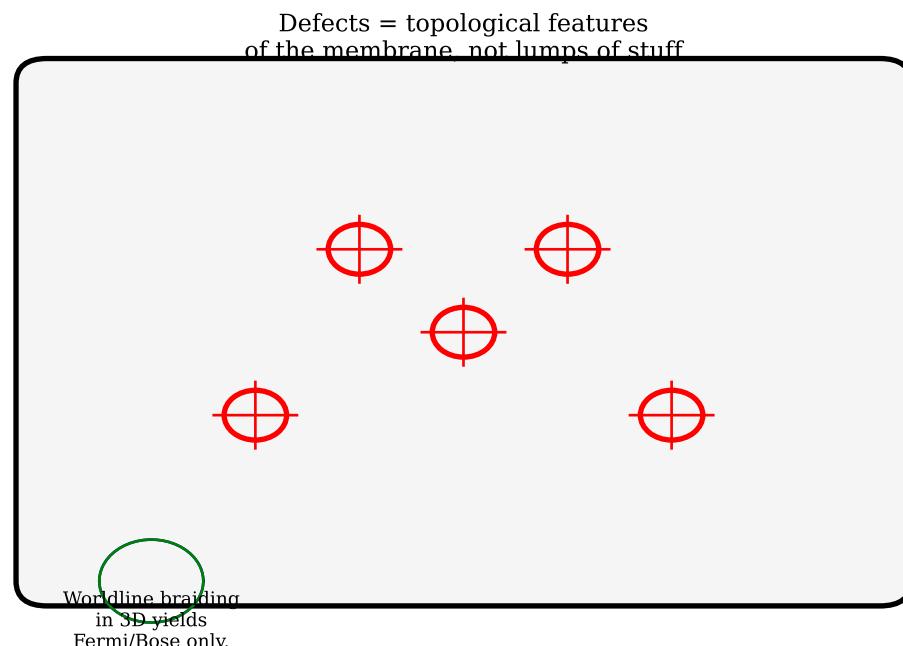
## 1. Hilbert Space



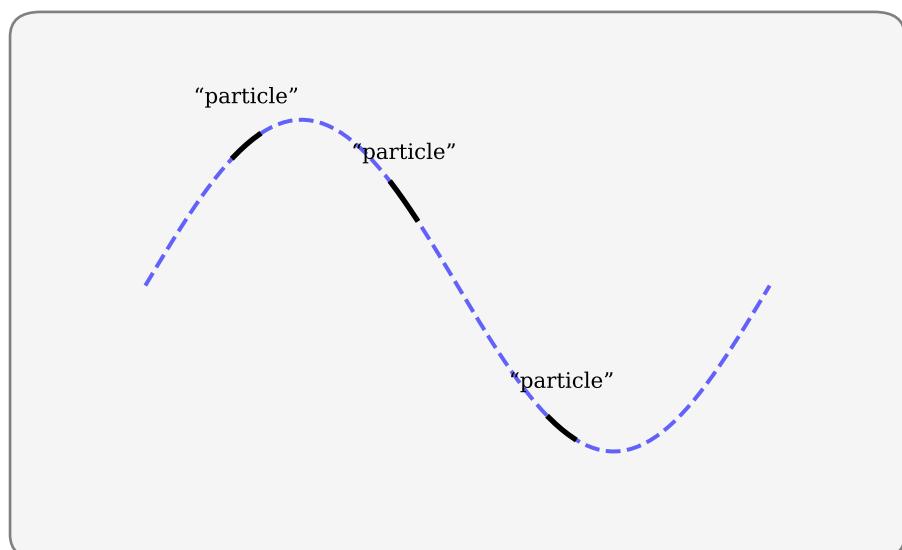
## 2. Defrag → 3D Membrane



## 3. Defects in the Membrane

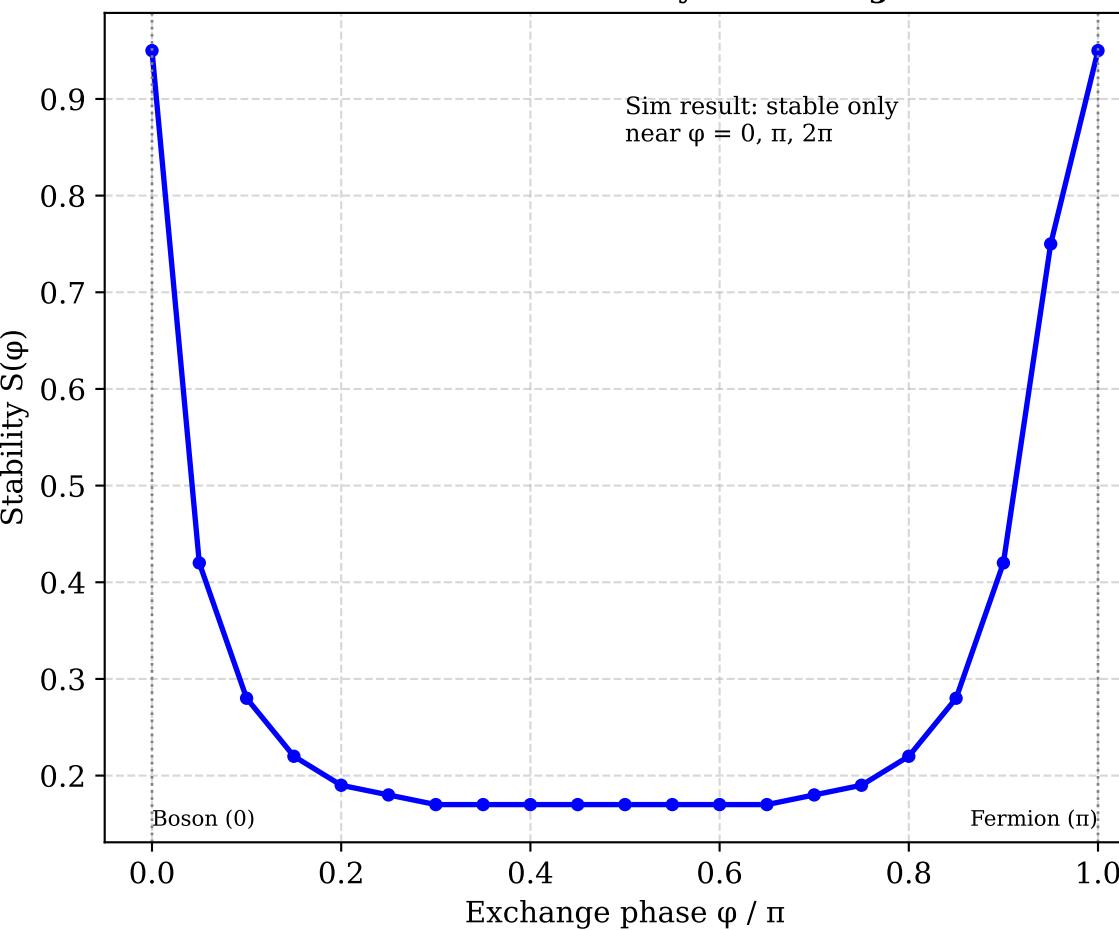


## 4. Trajectories: Not Newtonian



We see only small segments and call them "particles".

## 5. Embedded Data: Stability vs Exchange Phase



## 6. The Conclusion

**Fermions are not fundamental.**

They are the only non-trivial braid representation in 3D.

- Hilbert-space substrate
- Defrag → 3D membrane

Combine:

- Topological defects
- Actual stability data

• Hilbert space (dims 1, 2, 3)

- Unitarity
- Locality