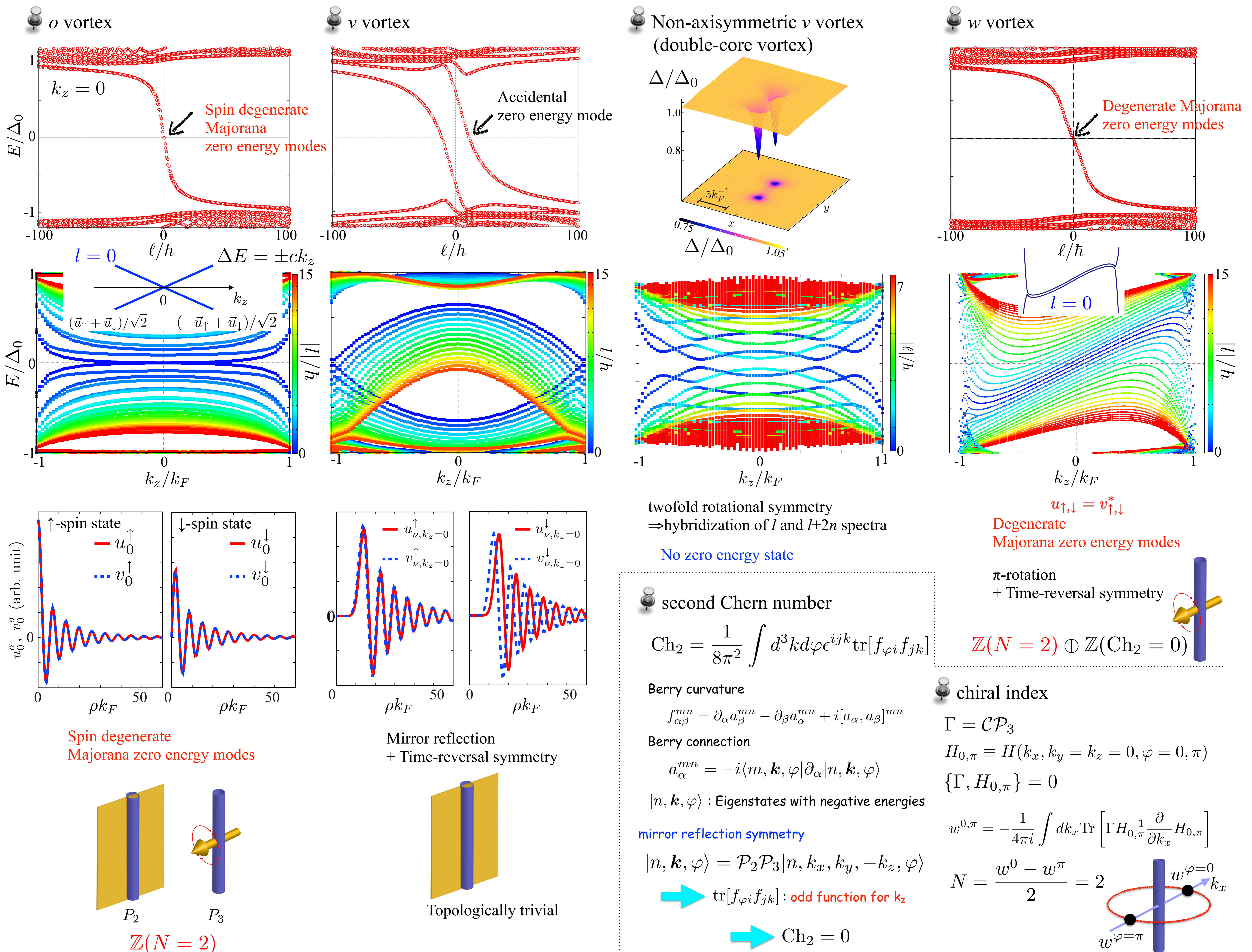


We clarify vortex bound state in superfluid ^3He B-phase by numerical calculation and topological argument.

Is there Majorana zero energy mode?

Can we distinguish vortices by vortex bound state experimentally?



Summary

- There are Majorana zero energy modes in o vortex and w vortex bound states.
- There is zero energy state in v vortex bound state but not in double-core vortex bound state owing to hybridization of angular momentum. The zero energy state may be utilized to distinguish between v vortex and double-core vortex.