Vivien Zapf’s lecture

1. What is the difference between abelian anyons and non-abelian anyon?

1. abelian anyons are fermions and non-abelian anyons are bosons
2. abelian anyons are edible, whereas non-abelian anyons are highly toxic
3. abelian anyons can exist in 2D while non-abelian anyons can exist in 3D
4. **Interchanging two abelian anyons adds an arbitrary phase factor to the quantum state, while interchanging non-abelian anyons requires a unitary transformation**

2. Which of these can be braided (moved around each other to change the state of the system by more than just a phase factor) and thus used for topological quantum computing?

1. fermions
2. bosons
3. abelian anyons
4. **non-abelian anyons**

3. Which of these are approaches being considered in the research community for topological quantum computing?

1. Kitaev quantum spin liquids
2. Topological superconductors
3. Certain fractional quantum hall materials
4. **All of the above**