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Abstract for an Invited Paper
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Non-Abelian topological phases

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I will discuss the role of topology in the storage and processing quantum information. Chern-Simons theories in their chiral and doubled versions will be discussed. The Fractional quantum hall effect is the leading example of topological phases and may be home to striking nonabelian examples such as the $\nu = 5/2$ state. These examples will be considered within a larger mathematical framework.