Aperiodic and Asymmetric Fibonacci Quasicrystals: Next Big Future in Quantum Computation

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Abstract : Quantum information is stored in states with multiple quasiparticles, which have a topological degeneracy. Topological quantum computation is concerned with two-dimensional many body systems that support excitations. Anyons are elementary building block of quantum computations. When anyons tunneling in a double-layer system can transition to an exotic non-Abelian state and produce Fibonacci anyons, which are powerful enough for universal topological quantum computation (TQC).Here the exotic behavior of Fibonacci Superlattice is studied by using analytical transfer matrix methods and hence Fibonacci anyons. This Fibonacci anyons can build a quantum computer which is very emerging and exciting field today's in Nanophotonics and quantum computation.