

Poincare polynomials for Abelian symplectic quotients of pure r -qubits via wall-crossings

ABSTRACT

In this paper, we compute a recursive wall-crossing formula for the Poincaré polynomials and Euler characteristics of Abelian symplectic quotients of a complex projective manifold under a special effective action of a torus with non-trivial characters. An analogy can be made with the space of pure states of a composite quantum system containing r -quantum bits under action of the maximal torus of Local Unitary operations.

Keyword: Poincaré polynomials; n -dimensional polytopes; Multi-particle quantum states