

Abstract Submitted
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An Alternative Approach to Aharonov-Anandan Phase¹ PIERRE-LOUIS GISCARD — We derive new expressions for the Aharonov-Anandan phase (AA-phase) for time independent Hamiltonians from which we develop a new method for the calculation of the AA-phase. We compare the generic method used to calculate the AA-phase with the method proposed here through four examples; a spin-1/2 particle in a constant magnetic field, an arbitrary infinite-sized Hamiltonian with two known eigenvalues, a Fabry-Perot cavity with one movable mirror and a three mirrors cavity with a slightly transmissive movable middle mirror. We then derive a continuous spectrum operator with the geometric Berry's phase, the Aharonov-Anandan phase or the Samuel-Bhandari phase as expectation value, depending on the conditions in which it is explicitly calculated.

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