

# Energy Level Crossing and Entanglement

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We consider a Hamilton operator in a finite dimensional Hilbert space with energy level crossing. We discuss the question how energy level crossing and entanglement of states in this Hilbert space are intertwined. Since energy level crossing is related to symmetries of the Hamilton operator we also derive these symmetries and give the reduction to the invariant Hilbert subspaces.

*Key words:* Energy Level Crossing; Symmetries; Group Theory; Entanglement.