On Exact Solutions of Novel Multistate Landau-Zener Problems.¹

ANIKET PATRA, EMIL YUZBASHYAN, Rutgers University — A multistate Landau-Zener (MLZ) Hamiltonian is used to model numerous non-equilibrium experiments involving cold atoms, quantum dots and quantum dot molecules. We recently showed that all the known MLZ problems either reduce to the 2 × 2 Landau Zener problem or belong to a family of mutually commuting Hamiltonians (that are polynomial in time).² Based on this classification we identify previously unknown MLZ problems, explicitly obtain their solutions and discuss relevant experimental scenarios.

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