

Abstract Submitted
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Exact, Floquet-based, Single Qubit Control¹ ANDREW SORN-
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Computing — Single-qubit gate design using oscillatory controls is related to the
Rabi problem of rotating a spin. In the classical solution one drives the spin with
an oscillatory electromagnetic field orthogonal to a background field. Here, we in-
troduce a new, general method for constructing continuous, oscillatory quantum
controls based on Floquet's theorem. We then derive a family of exact, analytical
solutions to the generalized Rabi problem of completely controlling a single-qubit in
a fixed background field.

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