

respect of trapped ions, the techniques presented are highly relevant to applications in quantum information processing and precision quantum metrology. The approach described here is suited to applications where accurate and high resolution phase control is required; for example, in recent proposals for generating Dicke and N00N states in trapped ions [40], as well as for high-fidelity local addressing of trapped atoms/ions by composite sequences of laser pulses [41]. Beyond ions, the general principles are also relevant to neutral atom systems used in quantum information with cavity QED [26], and atom interferometry for precision inertial sensing [20–22].

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