Optimal Control Functions of Photon Fock States in a Cavity
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Aeronautical University — The ability to control quantum mechanical states is an
essential requirement for many experiments in fundamental quantum mechanics and
applications in quantum information systems. Controllability for an atom in a cavity
has been shown, and experimental techniques for controlling Fock states in a cavity
have been displayed. However, a classical control theoretic treatment of an atom
in a cavity has not been developed. From methods in quantum control theory, we
develop optimal control functions for an atom in a cavity for different constraints
and cost functions.