

Abstract Submitted
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Analytic calculation of the transient radiation force on a two-level atom¹ HEUNG-RYOUL NOH, MIN JEONG SEO, SUN HYE KANG, Chonnam National University — We present an analytic calculation of the transient radiation force on a two-level atom interacting with a single mode laser- field. The analytic form of the radiation forces is derived by solving the optical Bloch equations analytically. It is confirmed, in particular, that the radiation force consists of reactive as well as dissipative components, whose explicit analytic forms of the transient solutions can be explicitly obtained. The succinct analytic solutions of the radiation forces may be helpful for a convenient and intuitive description of the complex atomic dynamics such as interaction with various laser fields.

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Heung-Ryoul Noh
Chonnam National University

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