Title:	Harnessing optical nonlinearity to control reversal of trapping force under pulsed excitation: a theoretical investigation
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Abstract:	The dramatic influence of optical Kerr effect on the nature of trapping force/potential under pulsed excitation has recently been explored, particularly in the context of trapping of dielectric nanoparticles (Devi and De 2016 Opt. Express 24 21485–96, Devi and De 2017 Phys. Rev. A 96 023856). However, the utility of such effect has yet to be fully understood, which we discuss here. For a variety of nanoparticles (core, core/shell, and hollow-core), we theoretically show how optical force/potential depend on the nature of the material under pulsed excitation and, most importantly, how the force/potential reverses from repulsive to attractive for certain hollow-core nanoparticles made of high nonlinear refractive index material.
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