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This dissertation investigates the dynamics of a one dimensional chain of spherical balls. The system can be modelled as a series of coupled nonlinear oscillators, and as such exhibits many interesting phenomena such as solitary waves [2] and intrinsic localized modes [1]. The system's nonlinearity derives from the contact forces between the spheres. These forces are nonlinear functions of the displacement, *i.e.* $m\ddot{u} = f(u^\alpha)$, $\alpha > 1$, where u is the displacement of the ball from equilibrium, $\ddot{u} \equiv \mathrm{d}^2u/\mathrm{d}t^2$, and f is some function of u^α [3].

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