

# **Cooperative Spontaneous Emission and Scattering of Light: A Theory of Coherent Radiation Damping**

Roy J. Glauber

*Department of Physics, Harvard University, Cambridge, MA 02138, USA*

A quantum radiated by any one of a collection of identical atoms may be absorbed by others and re-emitted many times before it emerges. The radiation is thus best described as a collective process. It takes place only in certain favored modes that have a particular range of decay lifetimes and corresponding ranges of spectral level shifts and line widths. The light that these atoms scatter resonantly also reflects this complex spectral structure.