Abstracts

Modes in Coupled Optical Resonators with Active Media

A general method is proposed to analyze the properties of optical systems composed of several coupled resonators. It is shown that by using appropriate matrices to represent the fields in the resonators and the couplings between them, an equation can be written, often by inspection, for the eigenvalue $s = \sigma + j\omega$ which gives the frequency and the rate of growth of the fields for all the modes of a given system. A re-entrant coupled system with loss and gain regions is discussed as an example. The effects of changes in mirror transmission, resonator length and medium properties are studied using the method.

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