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V. M. KUKLIN

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The book considers spontaneous and induced emission of particles and waves. The formation of coherent pulses near a detected new threshold of induced radiation is discussed. It is shown how modulation instabilities generate self-similar structures and anomalous waves. A comparison is made of the dynamics of instability of Langmuir oscillations in plasma and heating of ions in Silin and Zakharov models. Turbulent-wave instability is discussed and a new approach to the description of the Mossbauer effect is presented. The similarity of processes of superradiation and dissipative instability is noted. Structural transitions in the convective layer and the appearance of large-scale vortices during modulation instability of developed convection and other relevant problems are discussed. It is of interest to specialists, graduate students and students of physics departments.

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