

This talk gives a short insight to the spectral theory of open structures including some mathematical aspects of modeling the interaction of oscillations and waves. The problems in question are considered within the frames of spectral theory of nonselfadjoint operators and operator-valued functions (OVFs) using reduction to generalized dispersion equations (GDEs) and analysis of the spectral and various critical points (CPs) of multi-parameter OVFs, in particular, integral and infinite-matrix (summation) OVFs. It turns out that some CPs of the OVF are associated with the points where one or several eigenvalues of partial domains merge [4-7] and interaction of oscillations occur in this case; namely, the electromagnetic field distributions become unstable with respect to small variations of certain parameters of the structure (geometric, permittivity etc.) in the vicinities of critical values.

Introduction to the Mathematical Theory of Wave Propagation and Interaction

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主催：福岡工業大学情報科学研究所

後援：IEEE AP-S Fukuoka Chapter

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