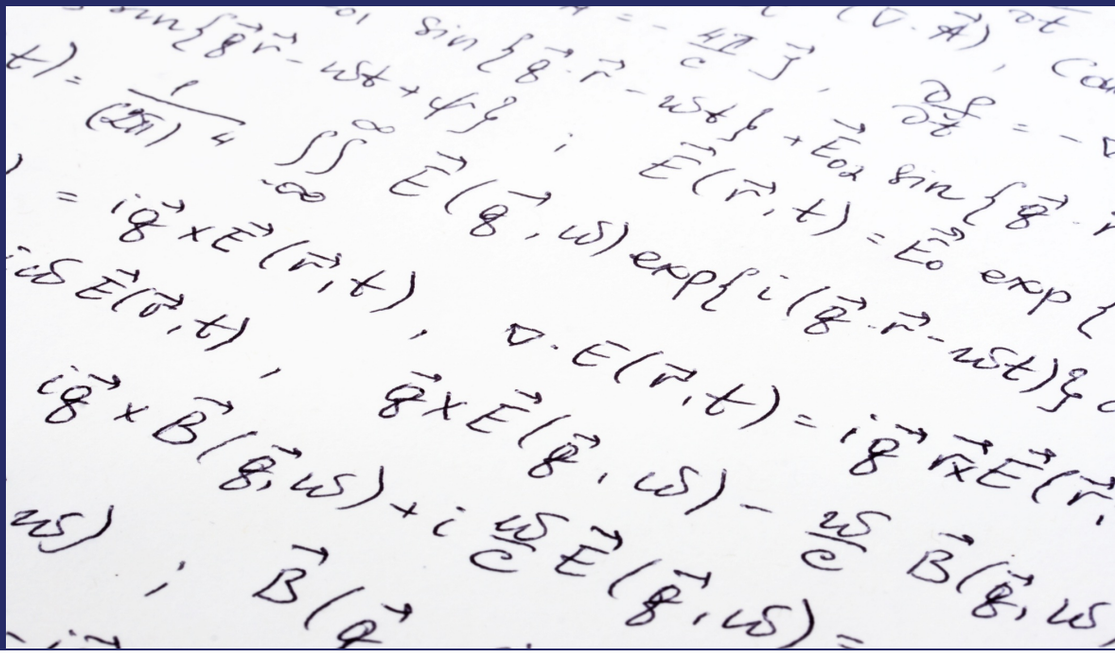
This book sets the foundation and framework of the Eigenmode Projection Technique (EPT) for electromagnetic scattering and resonance problems. The proposed technique combines several advantages and does not have many of the shortcomings in conventional numerical methods. The EPT has automatic and natural choice of the basis functions, being the eigenmodes of a fictitious canonical cavity. Also, it can be cast in both time and frequency domain in a straightforward manner. The frequency-domain version of the EPT has unique features, mainly the efficiency of the wideband analysis due to the inherent frequency-independent nature of generated matrices, in addition to the possibility of analyzing variations of a baseline object enclosed in the same canonical cavity by considering only integrals over the added/subtracted geometries. The latter feature applies to geometrical variations as well as to variations in the constitutive parameters.



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