Solving Cylindrically-Shaped Waveguides Partially-Filled with Isotropic Materials by Modal Techniques

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The paper presents a brief review of a modal analysis. The complete set of solutions in circular and coaxial waveguides is presented as well as some interesting combinations of these structures including a coaxial-to-coaxial transition and a coaxial-to-circular transition. Both transitions are completely analysed taking into account the modes that appear in each case. Finally a set of validations and practical examples are presented in order to test the usefulness of the toolbox developed.