

Modeling of Photonic Devices (RP 4.2.25)

Introduction: Importance, Various approaches, Validity issues (2)

Review of Mathematical techniques: Green's function – techniques and applications, Finite Difference Time-Domain (FDTD), Finite Element Methods (FEM), Solution of Integral equations, Random Variables, Probability Distributions, Monte Carlo techniques (7)

Models: Physics based equations, approximations, Equivalent circuits, Limitations (8)

Analysis: Solution using programming codes, Circuit Simulators, Device Simulators (4)

Case Studies: Taking examples of Photonic Devices (4)