

Sequential Sampling and Multivariate Modeling of High-Speed Electronic Components

T. Dhaene¹

Abstract: A sequential sampling and adaptive modeling algorithm is presented for building multivariate analytical models of passive microwave components and circuits. The algorithm automatically builds compact scalable macromodels and represents the scattering parameters of the passive components as a function of frequency and its geometrical parameters. The algorithm interpolates multiple fullwave electromagnetic (EM) simulations in one global multivariate macromodel that can be easily implemented and used in commercial circuit simulators. The macromodels provide EM-accuracy and generality at traditional circuit simulation speed.

¹ University of Antwerp
COMS research group, Department of Mathematics and Computer Science
Middelheimlaan 1, 2020 Antwerp, Belgium
tom.dhaene@ua.ac.be