20th International Zurich Symposium on Electromagnetic Compatibility

TU-2 on Monday, January 12

Title Tutorial	Transmission Line Theory in EMC: Its Theory and Application
Organizer's name	Prof. Yoshio Kami: kami@ice.uec.ac.jp
Organizer's affiliation	

Abstract: Transmission line (TL) theory based on telegrapher's equations (TEs) has been basic/fundamental for a long time in a field of communication technology. In a field of EMC, TEs have been studied for coupling of external electromagnetic fields to a TL under the condition of a current induced in transverse electromagnetic (TEM) mode transmission. TEs are also derived from Maxwell's equations and are differential equations with forcing terms denoting external field effects. TEs in such the case are sometimes called modified TEs. A set of equations to the modified TEs can be obtained in a form of ABCD matrix. The concept is mainly used for external field to TL coupling. In this tutorial, we will apply the modified TEs and the solutions to interference coupling problems between non-parallel traces on a printed circuit board, traces on different layers, and so on.