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Sommario/riassunto	We introduce a novel parametrization scheme for lossy and dispersive multiconductor transmission lines (MTLs) having a cross-section depending on geometrical and physical parameters, that is suitable to interconnect modeling. The proposed approach is based on the dyadic Green's function method for the analysis of lossy and dispersive MTLs which is parameterized by using the Multivariate Orthonormal Vector Fitting (MOVF) technique to build parametric macromodels in a rational form. Design parameters, such as substrate or geometrical layout features, in addition to frequency, can be easily handled. The rational form of the multi-port macromodel describing the MTL is a direct consequence of the MOVF technique and is especially suited to generate state-space macromodels or to be synthesized into equivalent circuits, which can be easily embedded into conventional SPICE-like solvers. A numerical example is presented providing evidence of the accuracy of the proposed approach in both frequency and time-domain.