

Abstracts

FD-TLM Modeling of Josephson Junction Circuits

*R.H. Voelker and C.G. Sentelle. "FD-TLM Modeling of Josephson Junction Circuits." 1995
Microwave and Guided Wave Letters 5.5 (May 1995 [MGWL]): 137-138.*

Josephson junction circuits are capable of operating at high frequencies where a full-wave field simulation is needed to completely analyze the circuits. The FD-TLM time-domain full-wave electromagnetic field calculation method is extended to modeling high-speed Josephson junction (JJ) circuits by the incorporation of a model for the JJ. The JJ model implementation is described and is validated by excellent agreement between FD-TLM and conventional circuit simulations of the transient response of a JJ circuit having short interconnections.

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