

AN EFFICIENT SYNTHESIS-ORIENTED CAD IMPLEMENTATION OF NYQUIST STABILITY CRITERION

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ABSTRACT

Nyquist stability criterion is largely used to determine the number of Right-Half Plane poles of feedback systems and circuits. However, visual inspection of open-loop gain polar plot is required, and automatic stability check within microwave CAD tools is not possible. In this paper, a procedure to check system and circuit linear stability by means of Nyquist criterion within CAD tools, is presented. The proposed method makes use of integral phase evaluation of a transfer function, and does not require visual inspection of Nyquist plots. The method has been successfully implemented in commercial microwave CAD tools.