Abstracts

Logic at Microwave Frequenciesn - Courtship or Marriage?

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The recent advent of logic and pseudo-logic devices operating at microwave frequencies poses many questions and the investigations to date provide some--but not all--of the answers. Perhaps the most frequently asked question is "why do we need logic at microwave frequencies and how will it be used." These questions are inevitably followed by "how do we fabricate gigabit logic devices and who is already in the business." This paper will address these questions, pose others, and attempt to assess the future of both the technology itself and its relationship to future microwave systems. Competing and overlapping base technologies such as silicon, gallium arsenide (GaAs), indium phosphide (InP), Josephson junction (JJ), and others will be compared and their state-of-the-art and future capabilities assessed. Also addressed are such issues as the "cross pollination" of microwave engineers and logic device designers as well as selected application examples.

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