

## Waveguide bandpass filter analysis and design using multimode parallel FDTD diakoptics

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This paper presents an analysis and design method based on finite-difference time-domain diakoptics. A complex structure is divided into several smaller subsections. The characteristics of the subsections are analyzed entirely in the time domain using mode-type discrete time-domain Green's functions. A multimode parallel algorithm is proposed to connect the subsections. Several filter analysis and design examples are presented. The effectiveness and accuracy of this method is demonstrated by comparison with other computational methods and measurements.

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