Abstracts

Some Considerations About the Finite Difference Time Domain Method in General Curvilinear Coordinates

Some considerations about the stability criterion and the dispersion of the Finite Difference Time Domain Method in General Curvilinear Coordinates are presented. An expression for the stability criterion and for the dispersion relation is found to be possible only for a mesh without curvature, and for this particular case, a dispersion relation is obtained in three dimensions. The analysis of this relation shows that a resolution of 10 cells per wavelength is enough in order to keep the dispersion error within a reasonable limit. A study of the reflection in the interface between two regions with different metrics is presented as well.

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