

FDTD法を用いた地磁気誘導電場計算

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The calculation of geomagnetically induced electric field by using FDTD method

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We have calculated geomagnetically induced electromagnetic field which is induced on the surface or underground by using frequency-domain analysis such as Fourier's transform. It is surely valid for a horizontally equable ground structure, or it is not good for complex ground structure like Japan area. To calculate exact field, we have to use a method that can count a complex ground structure. In this time, we have FDTD to calculate geomagnetically induced electromagnetic field, and we get the distribution of electromagnetic field and current of grounds. In this result, we can observe how coast line effect occurs, and we can evaluate how conductivity, magnetic permeability contribute to the distribution of electromagnetic field and current.