Abstracts

Complex Images for Electrostatic Field Computation in Multilayered Media

A rapidly convergent algorithm is presented to find the spatial simulated images of a point charge in multilayered media. The simulated images turn out to be complete i.e., they have complex amplitudes and are located at complex positions. Surprisingly, these complex images give very accurately (error ~ 0.1%) the static field in multilayered media. The examples of two- and three-layered media are examined, together with the available exact image solutions of singly or doubly infinite series. It is believed that the accuracy and rapid convergence of the complex images derive from the extra degrees of freedom arising from the imaginary components of the amplitude and position.

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