No Maxwell Electromagnetic Wave Field Excited In Cloaked Concealment

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(Dated: March 2, 2009)

Abstract

The GL electromagnetic (EM) modeling is used to simulate the 3D EM full wave field propagation through cloaks. The GL simulation of the EM wave field excited by a point source outside of the cloaks has been done and submitted to PRE. The simulation of the EM wave field from the point source excitation inside of the cloak device is presented in this paper. For a point source located inside of concealment, by using the GL modeling simulation, we discover a phenomenon that there is no Maxwell EM wave field which is excited by nonzero local sources inside of the cloaked concealment. The theoretical proof of the phenomenon by GL method is proposed in this paper. The GL method is fully different from the conventional methods. The GL method has double abilities of the theoretical analysis and numerical simulations to research the physical process and cloak metamaterial properties that is exhibited in this paper.

PACS numbers: 13.40.-f, 03.50.De, 41.20.-q, 41.20.jb,81.05.Zx, 42.70.-a, 52.25.Os,42.25.Bs

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