Development of GPU-based Visual Environment for Metamaterials Design

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Graphics Processing Units (GPUs) have become increasingly popular nowadays, giving exciting computational resources for the low-cost gaming gadgets. GPUs are also well suited for scientific applications, allowing researchers to accelerate computations and to improve the precision of mathematical methods. Paper describes a new version of Visual Environment for Metamaterials Modelling (VEM2), which implements algorithms of computation of physical properties of metamaterials using GPUs of a desktop computer. This allows VEM2' users to make intensive calculations with cheap hardware equipment instead of expensive supercomputers and significantly increase the effectiveness of metamaterials design.

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