

Discontinuous Galerkin method for the numerical simulation of elastic waves in fractured and heterogeneous media

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Abstract

In this work, we consider distribution of the elastic waves in fractured and heterogeneous media. The mathematical model is described by a hyperbolic second-order equation for displacements with specific interface conditions on the fracture. [2] For the time approximation, an explicit difference scheme is usually used. We use a discontinuous Galerkin method for the approximation by space which leads to the block-diagonal mass matrix and can be effectively implemented.[1, 3] The results of the numerical solution for the two-dimensional problem are presented for model problems of the wave propagation in the heterogeneous and fractured media.

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References

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