

A Conservative Spectral Element Method for the Approximation of Compressible Fluid Flow.

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Abstract: A method to approximate the Euler equations is presented. The method is a multi-domain approximation, and a variational form of the Euler equations is found by making use of the divergence theorem. The method is similar to that of the Discontinuous-Galerkin method of Cockburn and Shu, but the implementation is constructed through a spectral, multi-domain approach. The method is introduced and is shown to be a conservative scheme. A numerical example is given for the expanding flow around a point source as a comparison with the method proposed by Kopriva.

Keywords:

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