The Euler system describing the motion of an inviscid compressible fluid: analysis and numerics

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We discuss the problem of well/ill posedness of the Euler system describing the motion of a compressible viscous fluid. A new concept of dissipative solution is proposed to handle the stability problem, see [1]. The dissipative solutions comply with the principle of weak–strong uniqueness and are natural candidates to identify the limits of various approximate problems including numerical schemes. It is shown how the method of $\mathcal{K}-$convergence can be used to identify the limit solutions arising from suitable numerical schemes including the oscillations described in terms of the Young measures. In contrast to the existing convergence results available in the literature, the $\mathcal{K}-$convergence is strong with respect to the time–spatial variables.

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References

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