



Investigation of the Ultra-Relativistic Euler Equations

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LAP Lambert Academic Publishing Dez 2015, 2015. Taschenbuch. Book Condition: Neu. 220x150x12 mm. This item is printed on demand - Print on Demand Neuware - Hyperbolic systems describe the propagation of waves with finite velocities, which in special relativity are naturally bounded by the speed of light. This fact is reflected in the beautiful and interesting mathematical structure of the relativistic Euler equations. Nevertheless the relativistic Euler equations considered here seem to look complicated, an intensive study shows a simpler mathematical behavior than the corresponding classical Euler equations. For example, even the solution of the standard shock tube or Riemann problem for the classical Euler equations of gas dynamics may lead to a vacuum region within the shock tube that complicates a rigorous mathematical analysis for the general initial value problem. However, we will see that at least for the so called ultra-relativistic Euler equations this behavior will not occur. In this book we give strong Analytical and numerical investigation of the ultra-relativistic Euler equations for an ideal gas. 192 pp. Englisch.



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