二维空间中基于黎曼解的SPH方法(PDF)

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Title: SPH method based on riemann-solver in two dimensional space

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摘要： 应用传统的光滑粒子流体动力学(SPH)方法模拟激波问题能自主捕获波阵面，但是在接触间断界面处却不可避免地存在压力振荡。采用黎曼解修正粒子对之间的相互作用，并将基于黎曼解的SPH方法扩展到二维空间。通过对一维具有解析解的激波管问题和二维拟内爆问题的模拟，比较了基于黎曼解的SPH方法和传统的SPH方法。数值结果表明，相对于传统的SPH方法，基于黎曼解的SPH方法能够有效避免接触界面处的压力振荡，提高求解的精度。

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