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| **会议日程**<br>地点：祥宇宾馆 | |
| | **2021年9月17日** |
| 主持人 | 杜力力（四川大学） |
| 15:00-15:50 | **曹文涛（首都师范大学）**<br>**Isometric immersions and compensated compactness**<br>In this talk, the isometric immersion of two−dimensional Riemannian manifold with negative Gauss curvature into the three−dimensional Euclidean space is considered through the hyperbolic Gauss−Codazzi equations for the first and second fundamental forms. The large $L^\infty$ solution is obtained through compensated compactness approach, which leads to a C1,1 isometric immersion. The approximate solutions are constructed by adding artificial viscosity and the Lax−Friedrichs finite−difference scheme with the fractional step. The corresponding uniform estimates are achieved by maximum principle and studying some discrete ODEs respectively. This talk is based on joint results with Prof Feimin Huang and Prof Dehua Wang. |
| 15:50-16:40 | **王勇（中国科学院）**<br>**Global Solutions of the Compressible Euler-Poisson Equations with Large Initial Data of Spherical Symmetry**<br>We are concerned with a global existence theory for finite-energy solutions of the multidimensional Euler-Poisson equations for both compressible gaseous stars and plasmas with large initial data of spherical symmetry. One of the main challenges is the strengthening of waves as they move radially inward towards the origin, especially under the self-consistent gravitational field for gaseous stars. A fundamental unsolved problem is whether the density of the global solution forms concentration to become a delta measure at the origin. To solve this problem, we develop a new approach for the construction of approximate solutions as the solutions of an appropriately formulated free boundary problem for the compressible Navier-Stokes-Poisson equations with a carefully adapted class of degenerate density-dependent viscosity terms, so that a rigorous convergence proof of the approximate solutions to the corresponding global solution of the compressible Euler-Poisson equations with large initial data of spherical symmetry can be obtained. Even though the density may blow up near the origin at certain time, it is proved that no concentration (delta measure) is formed in the vanishing viscosity limit for the finite-energy solutions of the compressible Euler-Poisson equations for both gaseous stars and plasmas in the physical regimes under consideration. |
| 16:40-17:10 | 茶歇 |
| 主持人 | 程建峰（四川大学） |
| 17:10-18:00 | **袁迪凡（北京师范大学）**<br>**Stabilization Effect of Elasticity on compressible vortex sheets**<br>In this talk, I will introduce vortex sheets phenomena in compressible inviscid flow in elastodynamics. Vortex sheets in compressible Euler flows are classical subjects in the study of hydrodynamics which date back to 1950's. This is a nonlinear hyperbolic problem with a characteristic free boundary. Three dimensonal elastic vortex sheets have complicate interactions between the effects of elasticity and the fluid velocity, making the mathematical analysis more challenging. In the end, I will introduce some recent results, which are closely related to the geometric properties of the elastic deformation gradient. This is a joint work with Prof Ming Chen, Prof. Feimin Huang and Prof. Dehua Wang. |
| 18:00 | 晚餐（祥宇宾馆） |