

复旦大学数学科学学院 数学综合报告会

报告题目: **New progress on the large bv existence of p-system**

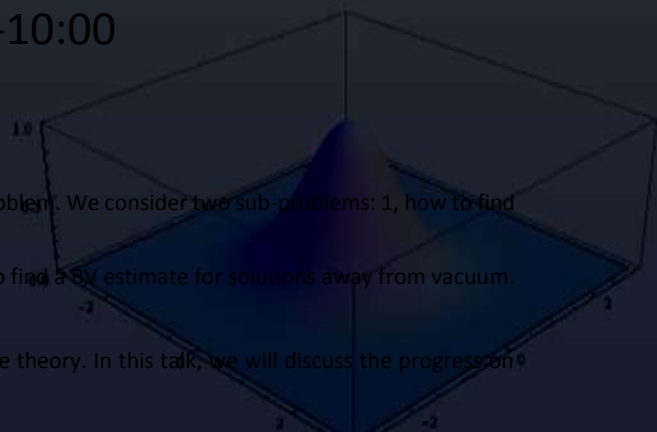
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报告地点: 光华东主楼 1501

摘要: The large BV existence of p-system is a long standing open problem. We consider two sub-problems: 1, how to find a positive time dependent lower bound on density for BV solutions; 2, how to find a BV estimate for solutions away from vacuum. The resolution of these two problems will finally provide a large BV existence theory. In this talk, we will discuss the progress on both of these problems. First, I proved a sharp $O(1/t)$ lower bound on density for the classical solutions, for both isentropic and nonisentropic gases, which can help extending law singularity formation result to all physical cases of isentropic and nonisentropic gases. On the other hand, in a very recent result with Alberto Bressan and Qingtian Zhang, we showed that Glimm-Lax' existence theory for large BV and small L^1 infy solution can be extended to a much more general case when we assume that there are only finite many large shocks on the (x,t) plane and solution is away from vacuum. The interaction pattern including possible BV norm blowup will also be discussed.



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