



偏微分方程及其应用中心

学术报告

报告题目: Some results of an overdetermined elliptic problem on unbounded domains

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摘要: We prove the existence of two smooth families of unbounded domains such that an overdetermined elliptic problem admits a sign-changing solution. The domains bifurcate from the straight cylinder. These results can be regarded as counterexamples to the Berenstein conjecture on unbounded domain. Unlike most previous papers in this direction, a very delicate issue here is that there may be two-dimensional kernel space at some bifurcation point. Thus a Grandall-Rabinowitz type bifurcation theorem from high-dimensional kernel space is also established to achieve the goal. Some other related results on overdetermined elliptic problems are also presented.