应用数学与基础数学

非线性奇摄动方程的脉冲解

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摘要　 对一类比较一般的施图姆-刘维尔型奇摄动问题,~%
揭示了其脉冲解的存在性,~并相应地给出了脉冲解的存在性条件.~%
利用边界层函数法构造其一致有效渐近解,~以及进行余项估计.~%
最后通过一个例子来进一步验证前面的结论.

关键词　 奇摄动　 边界层函数　 脉冲解

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Spike-like solutions of nonlinear singularly perturbed equations (Chinese)

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Abstract
 The existence of spike-like solutions of a class of Sturm-Liouville singularly perturbed problem was investigated and its sufficient condition was given. Meanwhile, the uniformly valid asymptotic solutions were constructed by the method of boundary layer functions and remainder estimation was presented. Finally, an example was given to illustrate the obtained results.

Key words　 singular perturbation　 boundary layer functions　 spike-like solutions

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