复旦大学数学科学学院
数学综合报告会

报告题目：Infinite-peakon solutions of the Camassa--Holm equation

报告人： 常向科 (中国科学院数学与系统科学研究院)

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报告摘要：

We describe a class of conservative low regularity solutions to the Camassa--Holm equation on the line by exploiting the moment problem and generalized indefinite strings to develop the inverse spectral method. In particular, we identify explicitly the solutions that are amenable to this approach, which include solutions made up of infinitely many peaked solitons (peakons). As an application, our results are then used to investigate the long-time behavior of solutions. We present three exemplary cases of solutions with: (i) discrete underlying spectrum associated with zero boundary and indeterminate moment problem; (ii) step-like initial data associated with the modified Laguerre weight, and (iii) asymptotically eventually periodic initial data associated with the modified Jacobi weight.

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