数学与系统科学研究院

计算数学所网络学术报告

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报告题目：

On an integrable multi-component Camassa-Holm system arising from Mobius geometry

邀请人： 常向科 副研究员

报告时间： 2020 年 12 月 12 日（周六）

下午 **14:00-15:00**

报告工具： 腾讯会议（**ID：505 951 921**）

Abstract：

In this talk, we study the geometric background, integrability and peaked solutions of a (1+n)-component Camassa-Holm (CH) system and some related multi-component integrable counterparts. We derive this multi-component CH system and its nonlocal µ-type version from the invariant curve flows in the Mobius geometry, and demonstrate that these two geometric systems are both integrable by establishing their bi-Hamiltonian structures as well as Lax-pair formulations respectively. We also investigate the peaked solutions for these two integrable systems. Moreover, we obtain an integrable (1+n)-component modified CH system, which admits the similar relationship with the geometric (1+n)-component CH system, in analogue to the relationship between the well-known CH and modified CH equations in scalar form. Finally, we prove a necessary condition, under which the dual integrable systems can inherit the Backlund correspondence from the original ones. The tri-Hamiltonian duality theory plays a key role in deriving the bi-Hamiltonian structures of the (1+n)-component (modified) CH systems.

欢迎大家参加！