

## 报告题目

Bäcklund transformations for the modified short pulse equation and complex modified short pulse equation

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### 报告摘要:

It is demonstrated that under a reciprocal transformation, the modified short pulse (mSP) equation is brought to the associated mSP equation, which is shown to be equivalent to the associated SP equation. This connection allows us to build a Bäcklund transformation (BT) and the general formula of its iterations for the mSP equation. In addition to the (real) mSP equation, we further apply the BT method to the complex modified short pulse (cmSP) equation, and both its BT and nonlinear superposition formula are worked out. As applications, for the cmSP equation we calculate its various solutions, such as the soliton solutions, cuspon solutions, breather solutions and their interaction solutions. This is a joint work with Min Xue and Hui Mao.

### 报告人简介:

刘青平，中国矿业大学（北京）教授、博导。1992年博士毕业于英国Leeds大学，2002年入选教育部“跨世纪人才培养计划”，2007年获北京市高等学校教学名师，2007年享受国务院政府特殊津贴，2017年获得北京市高等教育成果一等奖。研究领域为可积系统理论及其应用，在可积系统以及超对称理论方面做出了一系列重要的工作，发表在Communications in Mathematical Physics, Physics Letters B, Nonlinearity, Journal of Nonlinear Science, Inverse Problems 等杂志。