

学术报告: New truncated theorems for three classical theta function identities

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报告地点: 章辉 442

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报告摘要: In 2012, Andrews and Merca derived a truncated version of Euler's pentagonal number theorem. Their work inspired several scholars to work on truncated theta series including Guo and Zeng, who examined two other classical theta series identities of Gauss. In this talk, revisiting these three theta series identities of Euler and Gauss, we obtain new truncated theorems. As corollaries of our results, we obtain infinite families of linear inequalities involving the partition function, the overpartition function and the pod function. These inequalities yield the positive result of Andrews and Merca on the partition function as well as a conjecture on the overpartition function, which was posed by Andrews--Merca and Guo--Zeng, and proved independently by Mao and Yee. We will also provide a unified combinatorial treatment for our results.

报告人简介: 夏先伟, 教授, 博士生导师, 江苏省杰青获得者。2010年博士毕业于南开大学, 师从陈永川教授, 主要研究组合数学、特殊函数与整数分拆, 在包括 Math. Comput., Pacific J. Math., European J. Combin., Acta Arith., J. Number Theory 等国外学术期刊上发表研究论文 50 余篇。已结题一项国家青年基金, 一项国家面上项目, 目前主持一项国家面上项目。

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