



复旦大学数学科学学院 数学综合报告会

报告题目: The non-vanishing and the cyclicity of Dirichlet series

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地点: 腾讯会议: 826-468-478; 密码: 260424

报告摘要:

This talk concerns the non-vanishing and cyclicity of Dirichlet series of the form $D_{fg}(s) = \sum_{n=1}^{\infty} f(n)g(n)n^{-s}$, where f is periodic and g is completely multiplicative. Under the assumption that the sequence $\{g(p_j)\}_{j \geq 1}$ is standard—satisfying conditions inspired by the sequence of reciprocals of primes $\{\frac{1}{2}, \frac{1}{3}, \frac{1}{5}, \dots, \frac{1}{p_j}, \dots\}$ —we prove that the following are equivalent: (1) D_{fg} is non-vanishing in the right half-plane; (2) D_{fg} is cyclic in the Hardy space \mathcal{H}^2 of Dirichlet series; (3) D_{fg} can be factorized as a product of a non-vanishing Dirichlet polynomial and a Dirichlet series with completely multiplicative coefficients.

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