A p-arton Model for Modular Cusp Forms

Parikshit Dutta[*]

*Asutosh College, 92 Shyama Prasad Mukherjee Road,
Kolkata 700026, India*

Abstract

We propose to associate to a modular form (an infinite number of) complex valued functions on the p-adic numbers $\mathbb{Q}_p$ for each prime p. We elaborate on the correspondence and study its consequences in terms of the Mellin transform and the L-function related to the form. Further we discuss the case of products of Dirichlet L-functions and their Mellin duals, which are convolution products of ϑ-series. The latter are intriguingly similar to non-holomorphic Maass forms of weight zero as suggested by their Fourier coefficients.

---

[*]parikshitdutta@yahoo.co.in