

---

**SIDDHI PATHAK**, Queen's University

*Derivatives of L-series and generalized Stieltjes constants*

Generalized Stieltjes constants occur as coefficients of  $(s - 1)^k$  in the Laurent series expansion of certain Dirichlet series around  $s = 1$ . The connection between these generalized Stieltjes constants and derivatives of  $L(s, f)$  for periodic arithmetical functions  $f$ , at  $s = 1$  is known. We utilize this link to throw light on the arithmetic nature of  $L'(1, f)$  and certain Stieltjes constants. In particular, if  $p$  is an odd prime greater than 7, then we deduce the transcendence of at least  $(p - 7)/2$  of the generalized Stieltjes constants,  $\{\gamma_1(a, p) : 1 \leq a < p\}$ , conditional on a conjecture of S. Gun, M. Ram Murty and P. Rath.