

# Sign changes of Fourier coefficients of cusp forms supported on prime power indices

Kohnen, Winfried

Martin, Yves

© World Scientific Publishing Company. Let  $f$  be an even integral weight, normalized, cuspidal Hecke eigenform over  $SL_2(\mathbb{Z})$  with Fourier coefficients  $a(n)$ . Let  $j$  be a positive integer. We prove that for almost all primes  $p$  the sequence  $(a(p^j n))_{n \geq 0}$  has infinitely many sign changes. We also obtain a similar result for any cusp form with real Fourier coefficients that provide the characteristic polynomial of some generalized Hecke operator is irreducible over  $\mathbb{Q}$ .