Title: Asymptotic of Fourier coefficients of Hecke eigenforms at integers represented by a binary quadratic form of a fixed discriminant

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In this article, we establish the general asymptotic behaviour of the Fourier coefficients of the Hecke eigenforms supported at integers represented by a primitive integral positive-definite binary quadratic form of fixed discriminant $D < 0$ under the assumption that the class number $h(D) = 1$.

As a consequence, we also obtain a quantitative result for the number of sign changes of the sequence of normalised Fourier coefficients $\lambda_f(n)$ of Hecke eigenforms f over the indices, represented by a primitive integral positive definite binary quadratic form of fixed discriminant $D < 0$ when class number $h(D) = 1$; in the interval $(X, 2X]$ for sufficiently large X. Moreover, under the assumption of the Lindelöf hypothesis, the above-said sequence has at least $X^{\frac{1}{2}-\epsilon}$ many sign changes.

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