

Eigencurve over the boundary of the weight space

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We prove that the eigencurve associated to a definite quaternion algebra over \mathbb{Q} satisfies the following properties, as conjectured by Coleman–Mazur and Buzzard–Kilford:

- (a) over the boundary annuli of the weight space, the eigencurve is a disjoint union of (countably) infinitely many connected components each finite and flat over the weight annuli,
- (b) the Up-slopes of points on each fixed connected component are proportional to the p -adic valuations of the parameter on the weight space, and
- (c) the sequence of the slope ratios form a union of finitely many arithmetic progressions with the same common difference.

This is joint work with Daqing Wan and Liang Xiao.

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