The subconvexity problem for Rankin-Selberg L-functions and equidistribution of Heegner points

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Abstract

We shall review the latest developments in a program initiated by Kowalski, Michel and Vanderkam and further pursued by Michel. The goal is to prove a nontrivial bound in the level aspect for the L-function of the product of two classical Maass forms of arbitrary weights, one of the forms being fixed. In joint work with Michel, we succeed in proving such a bound as long as the fixed form obeys Selberg's conjecture or at least does not violate it too much. Another case where we succeed is when the nebentypus character of the varying form has small conductor. We pay special attention to polynomial uniformity in all other parameters. The bound implies the equidistribution of small Galois orbits of Heegner points on certain Shimura curves.