

Numerical Verification of the Rubin-Stark Conjecture

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Abstract: Let K/k be an abelian extension of number fields with Galois group G . Let χ be an irreducible character of G and S be a finite set of places of k containing the infinite places and the primes which ramify in K , as well as a place which splits completely. Then the Stark Conjecture states that the value $L'_S(\chi, 0)$ can be expressed by an S -unit (which is unique up to roots of unity) and a rational factor. Generalizing this to higher derivatives, one can refine this rationality condition under certain assumptions to an integrality statement, the Rubin-Stark Conjecture. This conjecture can be tested with the algorithm developed in my Master thesis up to possible rounding errors.