# Extending integral Stark-type conjectures

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Summary: In most Stark-type conjectures the order of vanishing of Artin $L$-functions at $s = 0$ is produced by primes in the set $S$ which split completely in $K/k$. Ideas of Dummit and Stark lead Stark to formulate in 2002 a new first order integral question which does not require the presence of a split prime in $S$. Popescu followed in 2003 with a similar suggestion that extends the higher order of vanishing conjectures of Rubin and Popescu. Under certain additional hypotheses these "extended" conjectures can be proven for large families of extensions $K/k$ and sets $S$ and $T$. I shall discuss my results for extensions of exponent 2, and certain other cases.