

# Extreme values of Artin $L$ -functions and class numbers

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**Abstract.** In this talk I will discuss analytic problems concerning extreme values of  $L$ -functions, in particular those attached to Galois representations. This subject was started in earnest by Littlewood with a seminal paper in 1929 where he treats quadratic Dirichlet  $L$ -functions at  $s = 1$  and the associated class numbers. After giving some background on this and related issues, I will outline some recent work generalizing the work of Littlewood to Artin  $L$ -functions. As an application, assuming the GRH and Artin conjecture for Artin  $L$ -functions, it is shown that there exists an infinite number of totally real number fields of a fixed degree whose Galois closure has the full symmetric group as Galois group and whose class number is essentially as large as possible.

