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Kannan Soundararajan*, University of Michigan. *Pretentious characters and the
Polya-Vinogradov inequality.*

For a Dirichlet character $\chi \pmod{q}$ (e.g. think of the Legendre symbol for quadratic residues/non-residues) the Polya-Vinogradov theorem gives an upper bound for the partial sums $\sum_{n \leq N} \chi(n)$. Recently, Andrew Granville and I have obtained the first significant improvements of this classical result for special types of characters (e.g. characters of small odd order). I will describe from scratch, characters and the Polya-Vinogradov result, and then explain some of the ideas in our work. The results depend on understanding when a character of some large conductor can "pretend" to be a character of small conductor — we call such characters "pretentious".

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