Minimizing GCD sums, multiplicative energy and applications

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In recent years, the question of maximizing GCD sums regained interest due to its firm link with large values of L-functions, leading for instance to the breakthrough improvement of Bondarenko and Seip concerning the maximum of $|\zeta(1/2+it)|$. In this talk, we address the counterpart problem of minimizing weighted GCD sums and show that it appears naturally in some applications. We consider as well a related optimization question regarding the usual multiplicative energy of a subset of the first N integers. We derive from our results some consequences for short character sums and non-vanishing of theta functions.

Thursday, April 4, 2019 11:00am - 12:00pm

Raiffeisen Lecture Hall, Central Building

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