

Friday, November 13, 2015, 4:10 pm

COLLOQUIUM TALK

Speaker: Maxim Yattselev

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# Hermite-Padé Approximation of Algebraic Functions

## Abstract:

In 1873, Hermite proved that the number  $e$  is transcendental. To do so he cleverly used a connection between diophantine and rational approximation. At the heart of his construction lay the problem of approximation of the vector of exponentials  $(e^z, e^{2z}, \dots, e^{mz})$  by certain vectors of rational functions  $(P_1/Q, P_2/Q, \dots, P_m/Q)$  where  $P_i/Q$  is chosen to interpolate  $e^{iz}$  at the origin with prescribed order. Such a vector of rational approximants with common denominator is now called an Hermite-Padé approximant. Even though the description of the behavior of the Hermite-Padé approximants for entire functions is not complete, it is well understood. On the other hand, if the approximated functions are algebraic, even the conjectural understanding of the convergence is not fully developed. In this talk, I will try to describe some aspects of the theory.

SNACKS IN FACULTY LOUNGE AT 3:30 PM.  
EVERYONE WELCOME (EVEN IF YOU ARE UNABLE TO ATTEND THE TALK)

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