Anniversary Talk

Values and Ideals in Combinatorial Problems

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Wednesday, April 18, 2007
12:00-12:50 pm in B650

The absolute value of complex numbers is surprisingly useful in the investigation of certain combinatorial problems. The connection often arises from imbedding finite cyclic groups into the complex numbers by sending the group elements to roots of unity. The modulus of the resulting sums of roots of unity usually is known explicitly, which allows the application of two powerful tools: the ideal theory of algebraic numbers and “size arguments” involving the absolute value of complex numbers. We will present some highlights of this approach including recent progress on Circulant Hadamard Matrices, Barker Sequences, Ryser's and Lander's Conjectures.

All are invited to this extremely interesting talk which will be addressed to general audiences.