Department of Applied Mathematics, University of Waterloo

GRADUATE STUDENT SEMINAR

DATE: MONDAY, APRIL 16, 2012
TIME: 17:30 − 18:30; MC 5136

Equivalence of some classical mathematical inequalities
- Minghua Lin, PhD Candidate -

It is common sense that Cauchy-Schwarz inequality is a special case of Hölder inequality. The usual derivation of Minkowski inequality is in terms of Hölder inequality. It would be a surprise if someone showed Hölder inequality would be a consequence of Cauchy-Schwarz inequality, and Hölder inequality and Minkowski inequality were actually equivalent. These facts are less well known. Following this line, equivalence of some other classical inequalities are presented in my talk, including

   I.   Arithmetic mean-Geometric mean inequality ⇔ Bernoulli inequality;
   II. Kantorovich inequality ⇔ Wielandt inequality;
   III. Arithmetic mean-Geometric mean inequality ⇔ Cauchy-Schwarz inequality.

PIZZA, SOFT DRINKS, AND SNACKS PROVIDED
COURTESY OF THE DEPARTMENT

Questions, Comments, and Interest can be directed to
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