

COLLOQUIUM
CENTER FOR APPLIED MATHEMATICS AND SCIENCE
DEPARTMENT OF MATHEMATICS
UNIVERSITY OF WEST GEORGIA

2:00 PM, WEDNESDAY, JANUARY 22, 2014, BOYD 306

Speaker: **Dr. Juri M. Rappoport**
Russian Academy of Sciences
Moscow, Russia

Title: **Some aspects of modified Kontorovich-Lebedev integral transforms**

Abstract:

A proof of inversion formulas of the modified Kontorovich-Lebedev integral transforms is developed. The Parseval equations for modified Kontorovich-Lebedev integral transforms are proved, and sufficient conditions for them are obtained. Some new representations and properties of these transforms are justified. The inequalities which give estimations for their kernels - the real and imaginary parts of the modified Bessel functions of the second kind $\Re K_{1/2+i\tau}(x)$ and $\Im K_{1/2+i\tau}(x)$ for all values of the variables x and τ are obtained. The applications of Kontorovich-Lebedev transforms to the solution of some mixed boundary value problems in the wedge domains are accomplished. The solution of the appropriate dual and singular integral equations is considered. The numerical aspects of using of these transforms are elaborated in details.

All are welcome.