

19th September - 3th October 2010, University of Rome "Tor Vergata" (TV)

10th - 24th October 2010, Lomonosov Moscow State University (LMSU)

Institute of Numerical Mathematics (INM), Russian Academy of Sciences (RAS)

Chinese University of Hong Kong (CUHK), CINVESTAV Mexico (CM)

The school

The main purpose of this joint school is to encourage the ideas exchange and scientific collaborations between universities and institutions of Rome and of Moscow, in the fields of matrix methods and applied linear algebra.

The school will take place during a whole month, two weeks in Rome and two weeks in Moscow, offering to young students a long time for learning and thinking over the arguments proposed, not limited to short courses of seminars. The school proposes advanced scientific topics and the opportunity of entering in direct contact with people and institutions of excellence in the field.

The main courses are: *Future of tensor computations: theory, algorithms and applications in many and few dimensions* (E. Tyrtysnikov), *Condensed forms for matrices under unitary similarities and congruences: theoretical problems and computational implications* (K. Ikramov), *Matrix structures and applications* (D. Bertaccini, C. Di Fiore, P. Zellini), *Eigenvalues of large Toeplitz matrices: asymptotic approach* (S. Grudsky, in Moscow), *A unified tight-frame approach for missing data recovery in images* (R. Chan, in Rome). Further seminars will be held by local expert researchers on topics related with the school theme.

For updated information on the school see www.mat.uniroma2.it/~tvmsscho

Application

The school is open to advanced undergraduate, graduate and PhD students of TV and LMSU, and of any other university.

To apply for participation, please send an e-mail to both the organizers of the school

C. Di Fiore, difiore@mat.uniroma2.it E. Tyrtysnikov, tee@bach.inm.ras.ru

preferably **within June 14, 2010**, enclosing the following documents:

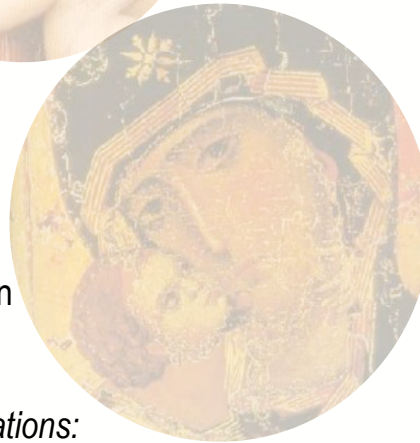
- 1) A scanned copy of a certificate showing the academic courses taken, with grades.
- 2) A scanned copy of a signed letter of recommendation.
- 3) A short CV reporting your main scientific interests.
- 4) A certificate of proficiency in English (note: a qualifying examination reported in the certificate in (1) or a declaration by the advising professor in (2), are enough).

The expenses for lodging for one student amount about to 150-200 euro, for each part of the school. Some scholarships are available with priority for students of TV and LMSU universities.



La Madonna ed il bambino,
Raffaello

Богоматерь Владимирская,
unknown iconographer



Main Lecturers and their scientific interests

Prof. E. Tyrtysnikov,
Corresponding Member RAS
Deputy Director INM

Numerical analysis, linear algebra and its applications, matrix and tensor computations, multidimensional problems, asymptotic matrix analysis

Prof. C. Di Fiore, TV

Numerical mathematics, matrix algebras and fast discrete transforms, low complexity quasi-Newton iterative schemes, structured linear systems

Prof. K. Ikramov, LMSU

Topics on the frontier between pure and computational linear algebra such as canonical and condensed forms and special classes of matrices

Prof. P. Zellini, TV

Well known academic and essayist, expert in fields of numerical linear algebra, complexity of numerical problems, low complexity quasi-Newton methods

Prof. R. H. Chan, CUHK

Chair professor, widely cited expert in numerical linear algebra, iterative Toeplitz solvers, image processing, queueing networks

Prof. D. Bertaccini, TV

Expert of algorithms based on matrix structures for efficiently solving numerical multidimensional problems arising in science and engineering

Prof. S. Grudsky, CM

Wiener-Hopf methods and its applications, spectral properties of large Toeplitz matrices.

School approved by the Faculty of Sciences MM.FF.NN. of TV, by the Faculty of Comput. Math. and Cybernetics, and by the Mech.-Math. Faculty of LMSU. Attending the courses of the school is equivalent to acquire credits of extra-curriculum activity.

Italian and Russian supporters:
TV, INdAM, MPS, LMSU