Global COE Program "Fostering Top Leaders in Mathematics - broadeing the core and exploring new ground"

Japan-Russia Summer School

June 27 - July 22 , 2011

Room 108, Faculty of Science Building No. 3
Department of Mathematics, Kyoto University

Boris FEIGIN
Characters of representations and difference Toda equations
1. Integrable representations and semi-infinite constructions
2. Coordinate rings of moduli spaces of bundles and Drinfeld and Laumon spaces
3. Fermionic formulas for the characters
4. Toda equations

Kenji FUKAYA
Symplectic geometry and Mirror symmetry
1. Introduction to symplectic geometry
2. Survey on pseudo-holomorphic curve
3. Introduction to Mirror symmetry
4. Homological Mirror symmetry

Masaki KASHIWARA
Microlocal analysis of sheaves on manifolds
1. Introduction of sheaves and derived categories
2. Microsupport of sheaves
3. Fourier-Sato transforms and deformation of normal cones
4. Perverse sheaves

Hiraku NAKAJIMA
Monopoles and quasimaps
1. What is a magnetic monople ?
2. Monopoles and Nahm's equation
3. Quasimaps to flag varieties
4. Quasimaps and representation theory

Leonid RYBNIKOV
Integrable systems and affine algebras at the critical level
1. Magri - Lenard scheme for classical integrable systems
2. Gaudin algebras
3. Affine algebras at the critical level and quantization of integrable systems
4. Opers on the projective line and spectra of Bethe algebras

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	Monday	Tuesday	Wednesday	Thursday	Friday
6/27 - 7/1	**FUKAYA** 1	**FEIGIN** 1	**FEIGIN** 2	**FUKAYA** 2	**FEIGIN** 3
7/4 - 7/8	**NAKAJIMA** 1	**RYBNIKOV** 1	**FEIGIN** 4	**NAKAJIMA** 2	**RYBNIKOV** 2
7/11 - 7/15	**FUKAYA** 3	**KASHIWARA** 1	**KASHIWARA** 2	**NAKAJIMA** 3	**RYBNIKOV** 3
7/18 - 7/22	**FUKAYA** 4	**KASHIWARA** 3	**KASHIWARA** 4	**NAKAJIMA** 4	**RYBNIKOV** 4