

NSFC

2007

Support period----From 1st, Jan, 2008

Open day: 1st. Mar., 2007

Due day: 20th. Mar., 2007

Main Programs

- 1. General Programs**
- 2. Key Programs**
- 3. Talent Programs**
- 4. International Cooperation Programs**
- 5. Special Programs**

Basic Game Rule

1. General Program
2. Key Program
3. Talent Program

Each scientist can *apply one and join one* same kind of program at one time

Each scientist can *apply two different kinds* of program at one time

4. International Cooperation Program
5. Special Program

General Programs

- Support 300,000 for three years
- No citizen or age requirement
- PhD or holding PI position (if without PhD or the PI position, e.g. students, can also apply with his supervisor's agreement and two PI's recommendations)
- Totally free on the program title
- For those leader scientist who is younger than 35, the *Junior Scientist Program* will have more advantage, each scientist will get support from the *Junior Scientist Program* only one time

General Programs

■ Support fields:

1. **Department of Mathematical and Physical Sciences:** *Symbolic Logic and Foundations of Mathematics, Number Theory, Algebra, Geometry, Topology, Function Theory, Functional Analysis, Modern Mathematical Physics, Ordinary Differential Equations and Dynamical Systems, Partial Differential Equation, Probability and Mathematical Statistics, Cybernetics, Discrete Mathematics, Computational Mathematics, Large Scale Scientific and Engineering Computing, Mathematical Physics, Mathematical Theory and Methods in Operational research, other edge subject in Mathematics, Mathematical Modeling and new arithmetic*
2. **Department of Biology Sciences:** *Biophysical, Biochemistry, Genetics, Cellular Biology, Microbiology, Botany, Bionomics, Forestry, Development Biology, Immunology, Neuroscience and psychology, Biomedicine, Agriculture, Farming, Zoology, Physiology and Pathology, Hygienic, Clinic, Pharmacology, Chinese Medicine*

Cases for year 2006

Dr. Axel Mosig got 170,000 from Department of Biology Sciences

Dr. Fangzhen Li got 200,000 from Department of Mathematical and Physical Sciences

Key Programs

- Support 1,600,000 for four years
- No citizen or age requirement
- Collaboration institution should be no more than two
- Leader scientist must hold a PI position

Key Programs

■ Department of Mathematical and Physical Sciences

- 1. Front research problems in Financial Mathematics
 - 1) theory and method to measure the dynamic dynamic risk under continuous time
 - 2) price determine of credi-related products and the risk control
 - 3) price determine and syzygy of credit-related products under restricted invest combination
 - 4) authorized agents and expect effect optimization under dynamic invest of multiple investors.
- 2. Algebraic Geometry
 - 1) Classification of general algebraic curves
 - 2) effective problems in algebraic geometry
 - 3) bi-ratinal classification of high-dimensional algebraic manifolds
 - 4) modulus space problems related to curves and vector bundles
 - 5) Theta functions and Shimura family
 - 6) Fundamental of non-coommutative algebraic geometry
- 3. Constructive methods in Combinatorial Mathematics
 - 1) Combinatorial and their machine proof
 - 2) construction problems and optimazation theory of finite combinatorial structures.
 - 3) algebraic combinatorics
 - 4) combinatorial matrices and algebraic graph theory
- 4. research problems of mathematical physics related to relative theory and super symmetry

Key Programs

- **Department of Mathematical and Physical Sciences**
- 5. harmonic analysis methods in partial differential equations
 - 1) theory of function space and their real function description
 - 2) Fourier restricted estimation, vibrational integration estimation and restricted modulus methods for diffusion equations
 - 3) Littlewood-Paley, Bony Littlewood-Parley theory, Bony integration-like estimation and their application in fluid mechanics equations.
 - 4) time-frequence analysis, Fourier licalization technique and its application in non-linear development equationjs.
 - 5) conformal transformation groups and their invariance, new type of Morawetz estimation and wave-type equation, the lower regularity and diffusion theory.
 - 6) rough kernel singular integration and its boundness
 - 7) Heisenberg groups and the harmonic analysis in heisenberger-type groups.
- 6. Statistics, analysis and application of complicate data that has been lost
 - 1) The Cox regressive models and parametric estimation of lost data under stochastic loosing
 - 2) the parametric estimation in linear regressive models of lost data under stochastic loosing
 - 3) single index regressive models and their parametric estimation
 - 4) ststistics analysis and their application in biological medicine of complicated lost data
- 7. mathematics theory, method and application of underministic processing
 - 1) mathematics basis of undeterministic processing
 - 2) classical and non-classical mathematics theory, hybrid and mix methods
 - 3) New theory and methods of information, signals, communication based on underministics processing
 - 4) undeterministic processing in engineering technologies
- 8. Combination and homology problems in algebra
 - 1) strong normal graph induced from canonical groups
 - 2) some famous homology conjecture in representative theory
 - 3) differential fractional-dim algebra and fractional-dim homology theory, tame algebra and combinatorial description
 - 4) using algebra represent and induce categories, representation of algebraic group and quantum group.
 - 5) Holomogy theory of Iwasawa algebra

Key Programs

■ Department of Mathematical and Physical Sciences

- 9. Operator algebra and operator theory.
 - 1) K -theory and (cyclic) homology, upper homology theory of non-commutative algebra
 - 2) using non-commutative topological transformation describe algebra, their application in geometric and topological problems
 - 3) structure of the non-self-accompany operators and the isometric invariance of operator algebra.
 - 4) von-Neumann algebra and non-commutative probability theory.
- 10. computational methods of non-linear optimization.
 - 1) reliable domain methods
 - 2) interior-point methods
 - 3) gradient methods
 - 4) sequence quadratic programming
 - 5) non-monotone optimizations
 - 6) large size mixed problems and its assimilation optimization methods
- 11. Holomorphic mapping, research problems on renormalization theory
 - 1) description on characteristics and parametrizing methods
 - 2) integral function and algebraic renormalization, the dynamics research
 - 3) ergodic theory of holomorphic mappings
 - 4) integral function, dynamics and related problems.
- 12. linear and non-linear numeric algebraic problems in scientific computations
 - 1) high-performance algorithm for solving linear and non-linear equations
 - 2) inverse problem of algebraic characteristics, numerical solution
 - 3) high-precision algorithm for solving high-degree algebraic equations.
 - 4) non-linear least square method, numerical method of

Key Programs

Department of Biology Sciences

Field	Projects Topic	Plan to Support Projects
Microbiology	Research on microbe correlative with energy and environment	2 -3
	Free application projects	2 -3
Botany	Self adoption with the abnormal environment of Plants	2 -3
	Free application projects	2 -3
Bionomics	The mechanism of decay of the severed specie	2 -3
	Free application projects	2 -3
Biophysics, Biochemistry and Molecular Biology	Free application projects only	6-8
Genetics and Development Biology	The molecular regulation of organic development	1-2
	The genetic base of Biology character affected by the environment	1-2
	Free application projects	2-3
Cellular Biology	Free application projects only	5-6
Immunology	Research on the immunity escape mechanism	1-2
	Free application projects	2-3
Neuroscience and psychology	Basic research on the nerve regeneration	1-2
	Free application projects	2-3
Biomedicine	Organize engineer materials and regeneration environment	1-2
	Free application projects	1-2
Zoology	Geography distribution of the severed species	1-2
	Zoological behavior mechanism research	1-2
	Free application projects	2-3

Talent Programs

- Outstanding Junior Scientist Grant
(including foreign citizen Chinese)
- Cooperation Research Grant with
oversea (including Hong Kong and
Macao)Chinese scientists

Talent Programs

Outstanding Junior Scientist Grant (including foreign citizen Chinese)

	Outstanding Junior Scientist Grant	Outstanding Junior Scientist Grant (foreign citizen Chinese)
Support	2,000,000 for four years	2,000,000 for four years
Amount	Plan to support 160 scientists	Plan to support 20 scientists
Citizen	Chinese Citizen	Foreign citizen Chinese
Age	Younger than 45	Younger than 45
Certificate	PhD or Holding Assistant Professor Title or above	PhD and Holding Professor Title or above
Other	the Chinese Institution is the only employer, working more than 6 months at China Mainland per year during the supporting duration	the Chinese Institution is the only employer, working full time at the Chinese Institution

Talent Programs

Cooperation Research Grant with overseas Chinese scientists (including Hong Kong and Macao)

	Cooperation Research Grant with overseas Chinese scientists	Cooperation Research Grant with Hong Kong and Macao Chinese scientists
Support	400,000 for three years	400,000 for three years
Amount	Plan to support 80 scientists totally	
Citizen	Chinese Citizen or Foreign citizen Chinese	Chinese Citizen or Foreign citizen Chinese
Age	Younger than 45	Younger than 45
Certificate	Holding Assistant Professor Title or above	Holding Assistant Professor Title or above
Other	Managing an independent lab or an important project overseas, at least working 2 months per year at China Mainland Institution, the China Mainland Institution and the applicant have contracted a cooperation agreement	

International Cooperation Programs

- Scientific Cooperation between nations(including Hong Kong and Macao)
- The Sino-German Center Program

International Cooperation Programs

Scientific Cooperation between nations

Country	Organization	Support Field	Grant	Duration	Amount	Open Day	Due Day
	A3	Climate Changing	2,000,000	3 years		Dec. 2006	
Japan	JST	Biogeocenose	1,000,000	3 years	5 projects	Apr. 2007	
	JSPS	Free Projects	See Notification	3 years	10 projects	Jul. 2007	Sep. 2007
		Conference	See Notification	N/A	4 projects		
Korea	KOSEF	Free Projects	See Notification	2 years		Oct. 2007	15th Dec. 2007
		Conference	See Notification	N/A			
India	CSIR	Free Projects	See Notification	3 years	3 projects	Jun. 2007	31th Jul. 2007
		Conference	See Notification	N/A	2 projects		
Egypt		Conference	See Notification	N/A			
Thailand		Conference	See Notification	N/A			
Pakistan		Conference	See Notification	N/A			
Switzerland	CERN	LHC	See Notification				
Italy	ICTP	Summer course for Mathematic Physics and earth Physics	See Notification		50 students		
Philippine and Mexico		Paddy research	See Notification				
Hong Kong		Information Technology, Life Science, Material, Enviroment and Chinese Medicine	15,000,000 total				
Macao							

International Cooperation Programs

Scientific Cooperation between nations

Country	Organization	Support Field	Grant	Duration
	IIASA	YSSP	See Notification	
America	NSF	Free Projects	See Notification	
		Conference	See Notification	N/A
		Social Economy Dynamic	See Notification	
Russia	RFBR	Free Projects	See Notification	
		Conference	See Notification	N/A
Canada	FRSQ			
	CIHR	Health		3 years
Australia	ARC			
	DEST			

International Cooperation Programs

Scientific Cooperation between nations

Country	Organization	Support Field
Australia	ARC	
	DEST	
Britain	RS	Joint Project
	EPSRC	
	BBSRC	
	PPARC	
	NERC	
	MRC	
Deutschland	DFG	short term visiting scientist
		workshop
		cooperation research
France	CNRS	
	CEA	
	INRA	
	IFREMER	
	PRA	
Finland	AF	

International Cooperation Programs

The Sino-German Center Program

- Conference between Chinese and German Scientist → Projects contracted on the conference
- Sino-german Cooperationsgroup
- Short term courses (at Beijing or Germany)
- The Nobel Prize winners annual conference

Programs are open all the time

Special Programs

- The Tian Yuan Mathematics Fund
Support Summer Courses, Research Cooperation, Seminar, Publications and Mathematical History
- Scientific Facility Research Fund
Support the *research* of Scientific Facility

Research Fellowship for International Young Researchers

- Support 50 visiting postdoc per year
- Support 100,000 for one year
- One year contract (the contract can be extended for one more year according to the evaluation))
- Foreign citizen, younger than 35, PhD
- Application will need:
 - 1. CV
 - 2. publication list
 - 3. permission from your former
 - 4. recommendation letters (3 letters will be best)
 - 5. research proposal
 - 6. Health Examination Record form Germany in recent 3 month (if you do not have, we should make one from an appointed institution in China)