

Status of APCTP

April, 2009

**Asia Pacific Center
for Theoretical Physics**

Pohang, Korea

SUMMARY

■During Fiscal Year 2008 (January 1, 2008 - December 31, 2008) India signed MOU with APCTP on International Academic Cooperation and became the 13th member country of the APCTP. On June 1, 2008 two Junior Research Groups(JRG) were launched according to the agreement on Scientific Cooperation, signed by APCTP, MPG and POSTECH in 2007. The scientific activities and researches were performed by resident and visiting scientists with a total of about 1,800. The center's academic activities also expanded with diverse international cooperations via joint institutes, external activities in member countries.

■Topical Research Program : In the fiscal year 2008, four core topics were selected on areas of particle physics, nuclear and astrophysics, condensed matter physics, and statistical physics, complex systems and biophysics. These programs, which included seminars, lectures, and annual summer and winter schools, provided fellows and scholars with opportunities to visit the Center and carry out the joint research.

■Focus Program : In the fiscal year 2008, four programs were selected on areas Quantum Field Theory and Mathematical Physics, Finite-size technology in low dimensional quantum system, Molecular Dynamics Simulations on Nano/Micro Systems and Unsolved theoretical problems in quantum transport of electrons. These programs lasted two weeks, allowing participants to engage in intense discussions and joint research activities in academic atmosphere.

■Others : Fifty-two research papers were produced as a result of the collaboration between researchers. Visiting scholars participated in both Topical Research Programs and Focus Programs as well. In this fiscal year, a combined total of forty-one International Conferences, workshops, and school sessions were also held at and around the Center and in member countries, including joint activities with YITP in Japan, KEK in Japan, JINR in Russia, PIMS in Canada, MPI-PKS in German, TPI in Canada and ASEAN, and nine external activities in vietnam, Taipei, Australia and Japan. These helped to enhance international collaboration between the Center and institutes abroad. The Center now have 20 researchers, some jointly appointed with POSTECH.

■Independent Junior Research Group(JRG) : After the Center made an agreement with Marx-Planck Society(MPG) and POSTECH for establishment of JRGs in 2007, two Independent Junior Research Groups(JRG) were launched at the Center to promote talented young scientists and give them the opportunity to qualify for appointment to scientific management positions in 2008. Since then, two groups have been successfully performing their research in the field of Condensed Matter and expected to quickly become strong residential research groups in Asia Pacific region. The Center will also set up one more group in the field of String Theory from March, 2009.

■Science Communication : The APCTP Web journal "Crossroads" with the vision for Science, Future and Humanity is published monthly and bilingually in both English and Korean. It was published 12 Issue and 83 articles, consisting of the articles consist of Editorials, Science Feature Articles, Science Essays, Science Fictions, Window to Asia etc. As science communicator activities, the diverse public events were held including "Science; speaking through books!", Science Communication Forum/Lecture, APCTP Distinguished Lectures, APCTP Science Communication School, 'Best Science Book 10' selected by APCTP, etc. The 5th Pohang family Science Festival was successfully held with 17,700 spectators.

■Organization : The Science Council was newly established. A new JRG wing was opened.

■Funding : The government budget for fiscal year 2009 is 2,415 million KRW.

Status Report
of
Asia Pacific Center
for Theoretical Physics

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1. Introduction

☐ Purposes and Objects

The Asia Pacific Center for Theoretical Physics (APCTP) is an international research center that seeks the highest quality of research, train young scientists in all areas of theoretical physics and beyond, and promote international cooperation among scientists from its member countries in the Asia-Pacific region and beyond. The Center was established in June 1996 in Korea, with Professor C. N. Yang as its founding president. Its current member countries/regions are Australia, Beijing, Japan, Korea, Lao PDR, Malaysia, Mongolia, Philippines, Singapore, Taipei, Thailand, and Vietnam. More countries in the Asia Pacific region are expected to join APCTP in the near future.

The Center aims to

- lead research in theoretical physics and beyond
- facilitate international collaborations
- contribute to the advancement of physics by training young physicists from the Asia Pacific region
- lead science communication with the public

To achieve its purposes, the Center

- pursues international academic collaboration in Asia Pacific and beyond
- educates and trains young physicists in the Asia Pacific region
- engages in topical research in all areas of theoretical and mathematical physics, including newly developing interdisciplinary areas
- publish a web journal and create high-quality literary contents
- carry out distinguished lectures and activities accessible to the public

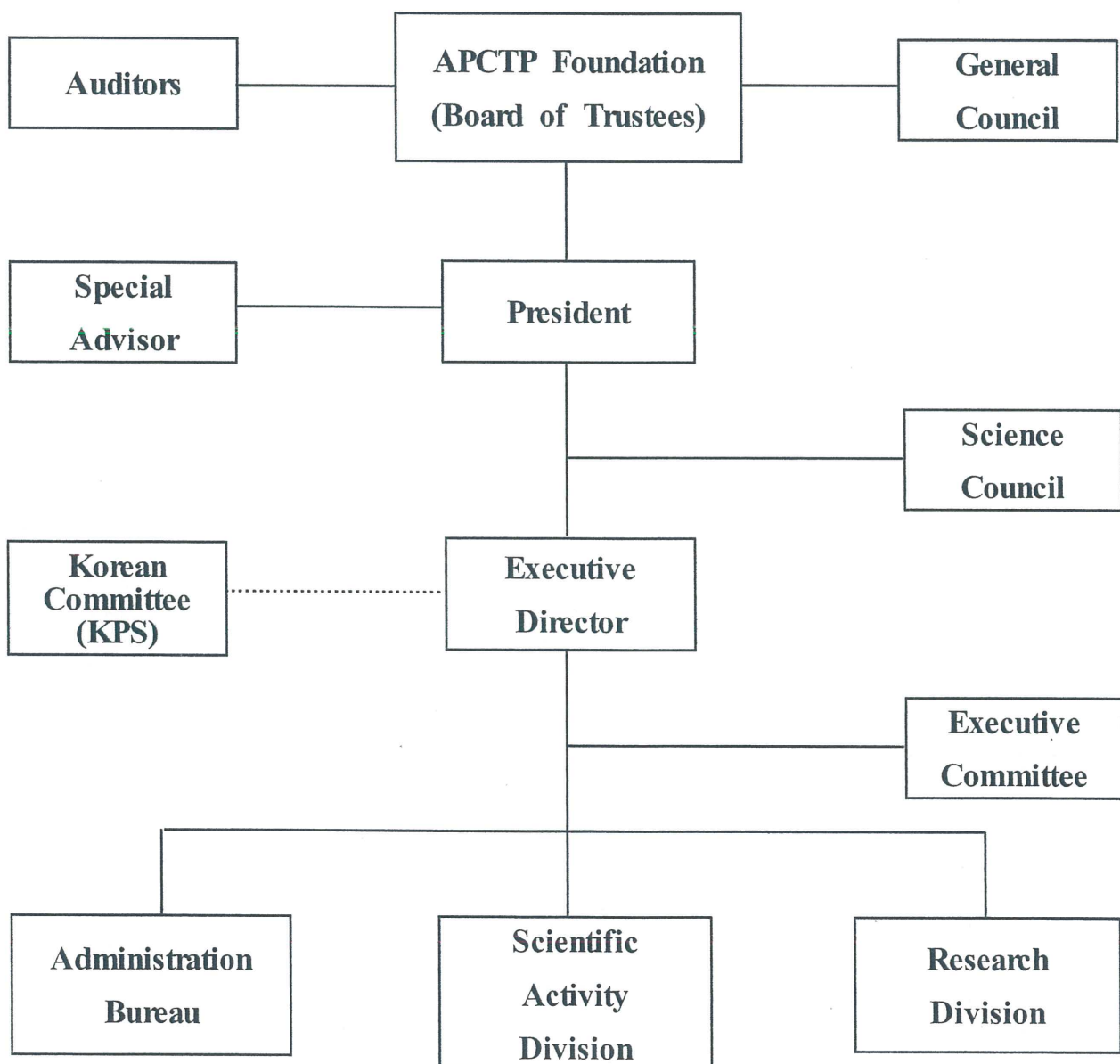
□ Milestones

- 1989. 11 Proposal of an international center for theoretical physics in the Asia Pacific region first discussed at KEK in Japan
- 1993. 2 Formation of the International Planning Committee (IPC) at Sorak Winter School
- 1994. 5 The IPC recommendation for the APCTP headquarters to be in Korea
- 1994. 11 Association for Science Cooperation in Asia (ASCA) in Manila endorses Vietnam's proposal to have the APCTP established in Korea
- 1995. 9 UNESCO PAC, IUPAP, and AAPPS endorses proposal of the establishment of APCTP
- 1996. 6 Inauguration conference and establishment of APCTP
- 1996. 6 Exchange of Memorandum of Cooperation between APCTP and ICTP
- 1996. 11 President of the Korean Government announces Korean support for APCTP at APEC Science Ministers Meeting in Seoul
- 1997. 1 Board of Trustees of APCTP appoints Professor C. N. Yang of the State University of New York at Stony Brook as first President and Chairman of the Board
- 1997. 2 First annual Winter School
- 1997. 4 APCTP Foundation is registered at the Korean Ministry of Science & Technology
- 1997. 5 First annual APCTP-ICTP Joint Conference
- 1998. 5 Launch of the biannual APCTP Bulletin
- 1998. 7 First annual APCTP-PIMS Joint Workshop
- 1998. 10 APCTP-NANKAI Symposium
- 1998. 10 Exchange of Agreement of Collaboration between APCTP and CRM
- 1999. 12 Exchange of Agreement of Collaboration between APCTP and NCTS
- 1999. 12 Opening of annex building in Kangnam-gu, Seoul for "Korea Foundation for Advanced Study (KFAS)"
- 2001. 1 Activity-Financing Contract between UNESCO and APCTP
- 2001. 5 Relocation of APCTP Headquarters from "Korea Institute for Advanced Study(KIAS)" Campus to annex building
- 2001. 7 Exchange of Agreement of Collaboration between APCTP and PIMS
- 2001. 8 APCTP Headquarters moves to its new host, POSTECH; Seoul Branch Office located in annex building.
- 2002. 5 Korean Government decides to support the Center by an annual "donation" through the Korea Science and Engineering Foundation
- 2002. 8 "Donation" decided to be made out of the Korean Government's Public Funds
- 2003. 3 Exchange of Agreement of Collaboration between APCTP and ECT*
- 2003. 7 Exchange of Agreement of Collaboration between APCTP and TPI

- 2003. 11 First Focus Program on Quantum Effects in Nanosystems
- 2004. 4 Board of Trustees of APCTP appoints Professor R. B. Laughlin of Stanford University as the second President, and re-elects Professor Arima as Chairman of the Board
- 2004. 4 First annual APCTP-TPI Joint Meeting
- 2004. 9 First annual APCTP-ECT* Joint Meeting
- 2004. 11 Start of Young Scientist Training Program
- 2004. 12 2005 Government budget increase to 1.5 billion KRW
- 2005. 2 Science Communication program launched
- 2005. 3 Relocation of APCTP headquarters to the Hogil Kim / Memorial Building 5 th Floor of POSTECH in Pohang
- 2005. 4 Host "Physics Enlightens the World" in Pohang to commemorate World Year of Physics
- 2005. 7 Exchange of Agreement of Collaboration between APCTP and ITP
- 2005. 10 APCTP Web journal (Crossroads) launched
- 2005. 10 Exchange of Memorandum for Cooperation between APCTP and institutions/societies of Indonesia, Laos, Myanmar, Mongolia, and Vietnam
- 2005. 12 Board of Trustees of the APCTP appoints Professor N. V. Hieu of Vietnam National University as the Chairman of the Board
- 2006. 4 Exchange of Agreement of Collaboration between APCTP and MPI-PKS
- 2006. 7 Exchange of Agreement of Collaboration between APCTP and JINR
- 2006. 11 APCTP 10th Anniversary
 - Exchange of Agreement of Collaboration between APCTP and RIKEN Nishina Center
 - Admission of Lao PDR and Mongolia as new members of the APCTP
- 2007. 1 Exchange of MOU between APCTP and IPNS/KEK
- 2007. 3 Board of Trustees of APCTP appoints Professor Peter Fulde of MPI-PKS as the third President
- 2007. 3 Exchange of Agreement of Collaboration between APCTP and YITP
- 2007. 8 Renew of Agreement of Collaboration between APCTP and ICTP
- 2007. 10 Exchange of Agreement of Collaboration between APCTP and MPG, POSTECH
- 2007. 10 Exchange of Agreement of Collaboration between APCTP and IOP, ISSP
- 2008. 3 Admission of India as a new member of APCTP
- 2008. 6 Start of the Junior Research Groups (JRG)
- 2008. 10 Opening of a new wing on JRG
- 2008. 10 Renew of Agreement of Collaboration between APCTP and TPI
- 2008. 11 Exchange of Letter of Agreement between ASEAN and APCTP

2. Organization and Management of the Center

☐ Administrative Structure of APCTP



☐ Trustees

Nguyen Van Hieu

Chairman, Board of Trustees of APCTP

Vietnamese Academy of Science and Technology (VAST), Vietnam

(2007. 4. 4 ~ 2010. 4. 3)

Peter Fulde

President, APCTP

Max Planck Institute for the Physics of Complex Systems, Germany

(Ex-Officio Trustee, 2007. 4. 4 ~ 2010. 4. 3)

Won Namkung

Standing Trustee, APCTP

Pohang University of Science & Technology (POSTECH), Korea

(2006. 11. 18 ~ 2009. 11. 17)

Seunghwan Kim

Executive Director, APCTP

Pohang University of Science & Technology (POSTECH), Korea

(Ex-Officio Trustee, 2007. 4. 4 ~ 2010. 4. 3)

Sooyoung Chang

Pohang University of Science & Technology (POSTECH), Korea

(2007. 4. 4 ~ 2010. 4. 3)

Duk In Choi

Korea Advanced Institute of Science and Technology (KAIST), Korea

(2007. 4. 4 ~ 2010. 4. 3)

Kazuo Fujikawa

Nihon University, Japan

(2005. 12. 4 ~ 2008. 12. 3)

Young Pak Lee

The Korean Physical Society, Korea

(Ex-Officio Trustee, 2009. 1. 1 ~ 2011. 12. 31)

Byung-taik Kim

Sungkyunkwan University, Korea

(2007. 4. 4 ~ 2010. 4. 3)

Yuan T. Lee

Academia Sinica, Taipei

(2007. 4. 4 ~ 2010. 4. 3)

Paul Anthony Pearce

University of Melbourne, Australia

(2007. 1. 23 ~ 2010. 1. 22)

Wenqing Shen

National Natural Science Foundation of China, Beijing

(2007. 4. 4 ~ 2010. 4. 3)

Hee Sung Song

Seoul National University, Korea

(2007. 4. 4 ~ 2010. 4. 3)

Chung Nam Whang

Yeonsei University, Korea

(2007. 4. 4 ~ 2010. 4. 3)

Chairman & CEO

Korea Science and Engineering Foundation, Korea

(Ex-Officio Trustee)

☐ **Auditors**

In-mook Kim

Korea University, Korea

(2006. 11. 18 ~ 2008. 11. 17)

Reiji Nagashima

RIKEN, Japan

(2007. 4. 1 ~ 2009. 3. 31)

□ General Council Members

Robert Leith Dewar

The Australian National University (ANU), Australia
(2008. 1. 1 ~ 2010. 12. 31)

Swee Ping Chia

INTI College Malaysia, Malaysia
(2008. 1. 1 ~ 2010. 12. 31)

Mo-Lin Ge

Nankai University, Beijing
(2008. 1. 1 ~ 2010. 12. 31)

Nguyen Hong Quang

Vietnamese Academy of Science and Technology (VAST), Vietnam
(2009. 1. 1 ~ 2010. 12. 31)

Hikaru Kawai

RIKEN, Japan
(2008. 1. 1 ~ 2010. 12. 31)

Noboru Kawamoto

Hokkaido University, Japan
(2008. 1. 1 ~ 2010. 12. 31)

Doochul Kim

Seoul National University, Korea
(2008. 1. 1 ~ 2010. 12. 31)

Bum Hoon Lee

Chair of Korean Committee
Sogang University, Korea
(2008. 1. 1 ~ 2010. 12. 31)

Naoto Nagaosa

University of Tokyo, Japan
(2008. 1. 1 ~ 2010. 12. 31)

Kok-Khoo Phua

World Scientific Publishing Co., Singapore
(2008. 1. 1 ~ 2010. 12. 31)

Deleg Sangaa

Mongolian Academy of Sciences, Mongolia

(2007. 1. 1 ~ 2009. 12. 31)

Wenqing Shen

National Natural Science Foundation of China, Beijing

(2008. 1. 1 ~ 2010. 12. 31)

Sourioudong Sundara

Science Technology and Environment Agency, Lao PDR

(2007. 1. 1 ~ 2009. 12. 31)

Zhong-can Ou-Yang

Institute of Theoretical Physics, Chinese Academy of Sciences, Beijing

(2008. 1. 1 ~ 2010. 12. 31)

Yunkyu Bang

Chonnam National University, Korea

(2008. 1. 1 ~ 2010. 12. 31)

Jose Perico Henson Esguerra

University of the Philippines Diliman, The Philippines

(2008. 1. 1 ~ 2010. 12. 31)

Sukit Limpijumnong

Suranaree University of Technology (SUT), Thailand

(2008. 1. 1 ~ 2010. 12. 31)

Hsiang-nan Li

Academia Sinica, Taipei

(2008. 1. 1 ~ 2010. 12. 31)

Chung-Yu Mou

National Tsing Hua University, Taipei

(2008. 1. 1 ~ 2010. 12. 31)

Dipankar Das Sarma

Indian Institute of Science, India

(2008. 3. 29 ~ 2010. 3. 28)

☐ Science Council Members

Peter Fulde

Max Planck Institute for the Physics of Complex Systems, Germany
(Ex-officio)

Ganapathy Baskaran

Institute of Mathematical Sciences, India
(2008. 3. 1 ~ 2013. 2. 28)

Yu Lu

ITP, CAS, Beijing
(2008. 3. 1 ~ 2013. 2. 28)

Kazuo Ueda

ISSP, Japan
(2008. 3. 1 ~ 2013. 2. 28)

Fu-Chun Zhang

University of Hong Kong, Hong Kong
(2008. 3. 1 ~ 2013. 2. 28)

☐ Special Advisor

Sung, Wokyung

Pohang University of Science & Technology (POSTECH), Korea
(2002. 1. 1 ~)

☐ Program Coordinators

Sang-Jin Sin

Kunsan University, Korea
(2008 1. 1 ~ 2009. 12. 31)

Yunkyu Bang

Chonnam National University, Korea
(2008 1. 1 ~ 2009. 12. 31)

Sang Pyo Kim

Kunsan University, Korea
(2008. 7. 1 ~ 2010. 6. 30)

Hyungtae Kook

Kyungwon University, Korea
(2008. 8. 1 ~ 2010. 7. 31)

3. Scientific Activities in 2008

▲ Topical Research Programs

Topical Research programs were run by organizers in close connection with scientists abroad. Each program provided a setting in which professors, scientists, and scholars were able to present topics of their choice through seminars and lectures, with some choosing also to hold workshops, conferences, and winter and summer session classes. The duration of a topical research program ranges anywhere from one month to six months.

No	Topic	Contents of Program			Number of Participant
		Lectures & Seminars	Mini-Workshop	School & Conference	
I	Particle Physics				
	String Theory and Its Applications	6	2		47
	Current Trends in Quantum Field Theories		1	1	61
	CP Violation in Quarks, Leptons and Universe	7		1	81
II	Condensed Matter Physics				
	Strongly Correlated Electron System	5	1	1	130
	Quantum Coherence and Correlations in Mesoscopic and Nano-Structure Systems		1		89
	Exploration of real materials with many-body theory and ab initio computations	24			24
III	Statistical Physics/Complex Systems				
	Statistical Physics of Disordered, Non-equilibrium and Complex Systems	16		1	84

No	Topic	Contents of Program			Number of Participant
		Lectures & Seminars	Mini-Workshop	School & Conference	
IV	Astrophysics/ Nuclear Physics				
	Creating Mini-Cosmos : Relativistic Heavy Ion Collisions at Highest Energies		3		89
	The Spacetime Structure in General Relativity and Gravitation II		2		64
	Computational Methods in Gravitation and Astrophysics	12	5	1	175
	The theory of Laboratory, Space and Astrophysical plasmas		1		49
	Total	70	16	5	893

▲ Conferences and Workshops

No	Topic	Period	Place	Organizer
1	The 24th Workshop on Numerical Relativity	March 29, 2008	APCTP Seoul Branch Office, Seoul, Korea	<ul style="list-style-type: none"> · Sang Pyo Kim · Hee Il Kim · Chang-Hwan Lee · Hyung Mok Lee · Hyung Won Lee · Inyong Cho · Dae-Il Choi · Sang Min Lee · Gungwon Kang
2	APCTP Spring Meeting on The Spacetime Structure in General Relativity and Gravitation	April 18-19, 2008	International Conference Hall in KISTI, Daejeon, Korea	<ul style="list-style-type: none"> · Sung-Won Kim · Gungwon Kang · Won Tae Kim · Soon Tae Hong · Hyunjoon Lee · Jong Hyuk Yoon
3	Heavy Ion Meeting 2008-04	April 19, 2008	Univ. of Seoul, Seoul, Korea	<ul style="list-style-type: none"> · InKyu Park · Geun-Bum Kim · Byungsik Hong · Eunjoon Kim
4	Mini-workshop on field theory	May 17~18, 2008	Academyhouse, Seoul, Korea	<ul style="list-style-type: none"> · Dongsu Bak · Sang-jin Sin · Soonkeon Nam · Seungjoon Hyun · Bumhoon Lee
5	The 1st Workshop for Emergent Materials Research	May 23~24, 2008	PIC, POSTECH, Pohang, Korea	<ul style="list-style-type: none"> · Byung-Il Min · Jae-Hoon Park · Sang-Wook Cheong · Jaehun Yu · Yoon Hee Jeong · Tae Won Noh · Jae-Geun Park
6	The 32nd Johns Hopkins Workshop on Perspectives in String Theory	May 28~31, 2008	Seoul Nat'l Univ., Seoul, Korea	<ul style="list-style-type: none"> · Changrim Ahn, · Dongsu Bak, · Soo-Jong Rey · Takao Suyama · Satoshi Yamaguchi · Hossein Yavartanoo
7	The 25th Workshop on Numerical Relativity	June 14, 2008	APCTP Seoul Branch Office, Seoul, Korea	<ul style="list-style-type: none"> · Sang Pyo Kim · Hee Il Kim · Chang-Hwan Lee · Hyung Mok Lee · Hyung Won Lee · Inyong Cho · Dae-Il Choi · Sang Min Lee · Gungwon Kang
8	AMO 2008 (Atomic Molecular and Optical Physics)	June 19~20, 2008	Muju Resort, Jeonbuk, Korea	<ul style="list-style-type: none"> · Lee, Ho Sung · An, Kyung Won · Kisik Kim
9	2008 2nd Laboratory, space, and astrophysical plasma workshop	June 21~22, 2008	PIC, POSTECH, Pohang, Korea	<ul style="list-style-type: none"> · Chang-Mo Ryu · Dongsu Ryu · Peter H. Yoon · BongJu Lee

No	Topic	Period	Place	Organizer
10	Nuclear Physics School 2008	June 30~ July 4, 2008	Korea Univ., Seoul, Korea	<ul style="list-style-type: none"> · Yong Kyun Kim · Wooyoung Kim · Hyun-Chul Kim · Jin-Hee Yoon · Su Houn Lee · Byungsik Hong
11	Heavy Ion Meeting 2008-07	July 11~12, 2008	Pusan Nat'l Univ., Busan, Korea	<ul style="list-style-type: none"> · Chang-Hwan Lee · Byungsik Hong · In-Kwon Yoo · Kang Seog Lee
12	The 6th International Symposium on Intrinsic Josephson Effect and Plasma Oscillations in High-Tc Superconductors (PLASMA 2008)	July 17~19, 2008	PIC, POSTECH, Pohang, Korea	<ul style="list-style-type: none"> · Hu-Jong Lee · Sang-Jae Kim
13	The 3rd APCTP-KAIST Summer School for Brain Dynamics	July 17~18, 2008	KAIST, Daejeon, Korea	<ul style="list-style-type: none"> · Jaeseung Jeong
14	2008 APCTP Summer School on Strongly Correlated Electron System	July 21~23, 2008	KIAS, Seoul, Korea	<ul style="list-style-type: none"> · Yunkyu Bang · Sung-Ik Lee · Kwon Park · Han-Yong Choi
15	2008 International Summer School on Computational Methods in Gravitation an Astrophysics	July 28~ August 1, 2008	APCTP Headquarters, Pohang, Korea	<ul style="list-style-type: none"> · Inyong Cho · Dae-Il Choi · Gungwon Kang · Hee Il Kim · Sang Pyo Kim · Chang-Hwan Lee · Hyung Mok Lee · Hyung Won Lee · Sang Min Lee · Masaru Shibata
16	The 8th Summer Institute for Theoretical Physics	August 4- 15, 2008	International Conference Hall, KIAS, Seoul, Korea	<ul style="list-style-type: none"> · Jaemo Park · Yoonbai Kim · Piljin Yi · Eung Jin Chun
17	APCTP 2008 LHC Physics Workshop at Korea	August 19- 21, 2008	Konkuk Univ., Seoul, Korea	<ul style="list-style-type: none"> · Sun kun Oh · Suyong Choi · Deog Ki Hong · Pyungwon Ko · Gui Nyun Kim · Seyong Kim · Soonken Nam · Sang-Jin Sin · Jeonghyeon Song

No	Topic	Period	Place	Organizer
18	The 30th International Free Elctron Laser Conference	August 24-29, 2008	Hotel Hilton, Gyeongju, Korea	<ul style="list-style-type: none"> • Heung Sik Kang • Se-Jin Kwon • Nayoung Kim • Mungyung Kim • Jae-Myoung Kim • Seungyu Rah • Seong-Hee Park • Seongju Park • Eung-Soo Park • Changbum Kim • Hong-Jip Park • Younguk Sohn • Ki-Tae Lee • Tae-Yeon Lee • Hee-Seok Lee • Young Uk Jeong • Hyuk-Jin Hong
19	The 27th Workshop on Numerical Relativity	September 8, 2008	Daejeon Convention Center, Daejeon, Korea	<ul style="list-style-type: none"> • Sang Pyo Kim • Hee Il Kim • Chang-Hwan Lee • Hyung Mok Lee • Hyung Won Lee • Inyong Cho • Dae-Il Choi • Sang Min Lee • Gungwon Kang
20	Recent Developments in String M Theory	September 22~26, 2008	Int'l Conference Hall, KIAS, Seoul, Korea	<ul style="list-style-type: none"> • Dongsu Bak • Chanju Kim • Ki-Myeong Lee • Jeong-Hyuck Park • Sang-Jin Sin • Piljin Yi
21	The 3rd IUPAP International Conference on Women in Physics 2008	October 8 - 10, 2008	Sofitel Ambassador Hotel, Seoul, Korea	<ul style="list-style-type: none"> • Youngah Park • Jin Hee Yoon • Hyeonsik Cheong • Young Jin Choi • Hawoong Jeong • Myung-Hwa Jung • Hye-Rim Kim • Hyunjung Kim • Seunghwan Kim • Baeho Park • Hyunggyu Park • Jae Hoon Park • Kungwon Rhie • Jeong- Hyeon Song • Eunkyung Suh • Ho-Soon Yang • Haein Yim • Jaejun Yu
22	4th Asian conference on High pressure research	October 14~17, 2008	Seoul Nat'l Univ., Seoul, Korea	<ul style="list-style-type: none"> • Sung-Ik Lee • Sung Keun Lee
23	Gwangju String Theory Workshop	October 24~26, 2008	Gwangju, Korea	<ul style="list-style-type: none"> • Dongsu Bak • Nakwoo Kim • Sangnam Park

No	Topic	Period	Place	Organizer
24	CosPA2008(Cosmology and Particle Astrophysics 2008)	October 28 ~November 1, 2008	PIC, POSTECH, Korea	<ul style="list-style-type: none"> · Kiwoon Choi · Xiao-Gang He · W.-Y. Pauchy Hwang · Toshitaka Kajino · Sang Pyo Kim · Miao Li · Bo-Qiang Ma · Kin-Wang Ng · Raymond Volkas · Bin Wang · Jun'ichi Yokoyama · Jaichan Hwang · Hang Bae Kim · Seunghwan Kim · Hyung Won Lee · Changbom Park · Il Hung Park · Ewan Stewart
25	Heavy Ion Meeting 2008-11	November 14 - 16, 2008	APCTP Headquarters, Pohang, Korea	<ul style="list-style-type: none"> · Chang-Hwan Lee · Youngman Kim · Hyun-Chul Kim · Tae-Sun Park · Jeongkeun Ahn · Minyoung Yoon · Byungsik Hong · Seoung-Woo Hong
26	The 28th Workshop on Numerical Relativity	November 21 - 22, 2008	Inje Univ., Busan, Korea	<ul style="list-style-type: none"> · Sang Pyo Kim · Hee Il Kim · Chang-Hwan Lee · Hyung Mok Lee · Hyung Won Lee · Inyong Cho · Dae-Il Choi · Sang Min Lee · Gungwon Kang
27	The 18th Workshop on Nanoscale and Mesoscopic Systems	December 5~6, 2008	POSTECH, Pohang, Korea	<ul style="list-style-type: none"> · Choi, Mahn-Soo · Choi, Moo Young · Chung, Yunchul · Kang, Kicheon · Kim, Ju-Jin · Kim, Jinhee · Lee, Hu-Jong · Lee, Hyun-Woo · Park, Kwon · Park, Kyung Wan · Sim, Heungsun · Yi, Hangmo
28	The 1st APCTP Workshop on Multiferroic	December 11~16, 2008	APCTP Headquarters, Pohang, Korea	<ul style="list-style-type: none"> · Y.H.Jeong · S. W. Cheong · D. Khomskii
29	2008 APCTP Astrophysics Winter school	December 15 - 16, 2008	Ewha Womans Univ., Seoul, Korea	<ul style="list-style-type: none"> · Sung-Won Kim

▲ Winter Schools

No	Topic	Period	Place	Organizer
1	The 12th APCTP Winter Workshop on Strongly Correlated Electron Systems	January 20~26, 2008	APCTP Headquarters, Pohang, Korea	<ul style="list-style-type: none"> · Hai-Hu Wen · Atsushi Fujimori · T.K. Lee · Mukunda Das · Tae Won Noh · Chang Young Kim · Hyoung Joon Choi · Yun Kyu Bang · Hyun Cheol Lee · In Jae Lee · Bokki Kim · Kee Hoon Kim · Kwon Park · Sung-Ik Lee
2	APCTP Winter School on Black Hole Astrophysics 2008	January 24~29, 2008	APCTP Headquarters, Pohang and KASI, Daejeon Korea	<ul style="list-style-type: none"> · Matthew W. Choptuik · Bala R. Iyer · Wei-Tou Ni · Frans Pretorius · Masaru Shibata · Dae-Il Choi · Hyung Won Lee · Chul-Sung Choi · Sang Pyo Kim · Chang-Hwan Lee · Gungwon Kang · Jongsu Kim · Sung-Won Kim · Dongsu Ryu
3	5th APCTP-KIAS Winter School on Statistical Physics	January 28~31, 2008	Phoenix Park, Gangwondo, Korea	<ul style="list-style-type: none"> · Moo Young Choi · Hyeong-Chai Jeong · Hyungtae Kook · Sangbub Lee · Jin Min Kim · Yup Kim · Hyunggyu Park · Jeong-Man Park
4	APCTP / CQeST Field Theory Winter School 2008	February 18-22, 2008	APCTP Headquarters, Pohang, Korea	<ul style="list-style-type: none"> · Chanju Kim · Chaiho Rim · Kimyeong Lee
5	YongPyong Astro-Particle and Conformal Topical Physics 2008	February 25~29, 2008	YongPyong Ski Resort, Gangwon-do, Korea	<ul style="list-style-type: none"> · S.H. Chang · E.J. Chun · S. J. Huyn · C. S. Kim · Y.J. Kwon · B.H. Lee · S.K. Oh · K. Siyeon

▲ Focus Programs

Focus Programs invited active international scholars to do highly specialized research in physics and its related areas. It included a set of lectures and/or mini-workshops on specialized research topics.

No	Topic	Period	Place	Organizer
1	Quantum Field Theory and Mathematical Physics	January 6~15, 2008	APCTP Headquarters, Pohang, Korea	<ul style="list-style-type: none"> · Gerald Dunne · Kimyoung Lee · Choolkyu Lee · Hyunsoo Min
2	Finite-size technology in low dimensional quantum system (IV)	June 25~July 15, 2008	APCTP Headquarters, Pohang, Korea	<ul style="list-style-type: none"> · Chaiho Rim · Paul Pearce · Giuseppe Mussardo
3	Focus Program on Molecular Dynamics Simulations on Nano/Micro Systems	August 4~12, 2008	APCTP Headquarters, Pohang, Korea	<ul style="list-style-type: none"> · Sang-Rak Kim · Wonmuk Hwang · Hyungtae Kook · Youngkyun Jung
4	APCTP Focus Program on Unsolved theoretical problems in quantum transport of electrons	August 14~27, 2008	APCTP Headquarters, Pohang, Korea	<ul style="list-style-type: none"> · Kang-Hun Ahn · Hangmo Yi

4. International Cooperations in 2008

▲ Joint Activities with Other Institutes

- APCTP-YITP Workshop on Accretion and Outflow in Astrophysics and the second Korea-Japan Young Astronomers Meeting
(January 8~11 / Honnouji Kaikan, Kyoto, Japan)
- The 2nd Asian Winter School on String Theory
(January 15~25 / Kusatsu-Machi, Agatsuma-Gun Gunma, Japan)
- 2008 APCTP-BLTP JINR Joint Workshop on "Quarks and Mesons in Nuclear Physics"
(April 20~24 / APCTP Headquarters, Pohang, Korea)
- Summer School on Particles, Fields and Strings
(July 22~August 1 / University of British Columbia, Vancouver, Canada)
- Summer School on Time-Resolved X-Ray Processes in Atoms, Molecules and Solids & International Workshop on Time-Resolved X-Ray Dynamics
(July 29~August 8 / MPI-PKS, Dresden, Germany)
- APCTP-ASEAN WORKSHOP ON ADVANCED MATERIALS SCIENCE AND NANOTECHNOLOGY
(September 15~21 / Nha Trang, Vietnam)
- Black Holes: Theoretical, Mathematical and Computational aspects
(November 9~14 / Banff Int'l Research Station, Alberta, Canada)

▲ External Activities

- 14th Vietnam School of Physics
(January 3~16, 2008 / Quy-Nhon University, Vietnam)
- 2008 Taitung International School/Workshop on Cosmology and Gravitation
(January 7~10, 2008 / National Taitung University, Taitung, Taipei)
- 21st Spring School On Particles & Fields
(March 31~April 3, 2008 / Institute of Physics, NCTU, Taipei)
- Fourth Asia Pacific Conference in Quantum Information Science
(July 2~5, 2008 / Cairns, Queensland, Australia)
- Summer institute 2008
(August 10~17, 2008 / Chi-Tou, Taipei)
- Dynamics Days Asia Pacific 5 (DDAP5)
(September 9~12, 2008 / Nara, Japan)

- What is Creativity? Emergent Phenomena in Complex Adaptive Systems (October 20~22, 2008 / Co-op Inn Kyoto Conference Hall, Japan)
- The 11th Asian Workshop on First-Principles Electronic Structure Calculations (November 3~5, 2008 / Nat'l Sun Yat-sen University, Taipei)
- 22nd Canberra International Physics Summer School: Complex Physical, Biophysical and Econophysical Systems (December 9~18, 2008 / The Australian National University, Canberra, Australia)

▲ Collaborations with Other Institutes

- Signed an agreement for mutual cooperation with TPI, Canada (Renew)
- Exchange of Formalisation letter for mutual cooperation with ASEAN COST
- According to the Agreements and cooperation with ITP, ICTP, NCTS, JINR, MPI-PKS and PIMS various joint activities are expected to be carried out throughout the year.
- Admission of India as a new member of APCTP

5. Publications in 2008

▲ APCTP Bulletin

- **20th-21th APCTP Bulletin**

- Date of Publication: December 2008
- Contributors : Seunghwan Kim
- Contents: Asia-Pacific Forum, APCTP News, Topics in Physics, We hear that,
Report on Scientific Activities, Report on Scientist Network Activities,
Bulletin Boards
- Circulation: 2,000

▲ APCTP Research Papers

- Preprints : 4
- Reprints(SCI) : 47(46)
- Proceedings : 1

6. Scientists of the Center

▲ Researchers in Residence

- 4 Coordinators
in condensed matter theory, complex systems & biophysics,
astrophysics, particle physics, astrophysics & nuclear physics
- 2 Adjunct Professors
in complex systems and biophysics
- 9 Postdoctoral Researchers
in condensed matter theory, complex systems & biophysics,
astrophysics, particle physics, astrophysics & nuclear physics
- 1 Junior Researchers
in condensed matter theory
- 2 Joint Professors
in condensed matter theory
- 1 Joint Researcher
in complex systems & biophysics

▲ Visiting Scientists

1,868 scientists visited the Center in 2008 to participate in visitors programs consisting of lectures, seminars, and other scientific activities. (469 from foreign institutes and 1,399 from domestic institutes)

▲ Junior Research Group

Two leaders of JRGs and one research professor started to organize their group and do the research at the Center from June 1, 2008. The leaders and their members carried out their work independently within the scope of the research task at hand.

- Group : 2
- Leader : 2
- Research Professor : 1
- Group Members : 4
- Seminar : 8
- Workshop : 3
- Visitors : 16

□ Junior Research Groups Leaders & Members

Group 1: Condensed Matter & Field Theory Group			
Name	Title	Nationality	Period
Xin Wan	Leader/ Professor	Beijing	2008.6.1~2013.5.31
Hyun Jung Lee	Dr.	Korea	2008.9.1~2010.8.31
Ki Hoon Lee	Mr.	Korea	2008.9.1~2010.8.31

Group 2: Multi-scale Modeling Group			
Name	Title	Nationality	Period
Xin Zhou	Leader/ Professor	Beijing	2008.6.1~2013.5.31
Shun Xu	Mr.	Beijing	2008.11.18~2009.11.17
Linchen Gong	Mr.	Beijing	2008.12.11~2009.5.10

Research Professor			
Name	Title	Nationality	Period
Ki-Seok Kim	Research Professor	Korea	2008.10.1~2013.9.30

▲ Young Scientist Training Program

In Young Scientist Training Program aiming for training of young scientists in the Asia-Pacific region, fourteen young scientists and one Junior young scientist performed their work successfully via collaborating with Coordinators and JRGs at the Center in 2008.

- Young Scientist Training Programs (YST): 14 Person
; Training at the postdoctoral level
- Junior YST Network Programs (Junior YST): 1 Person
; Support graduate students in cooperation with membership countries

☐ List of YST

Name	Nationality	Field	Period
TRAN Minh-Tien	Vietnam	Strongly correlated electron systems	2007.5.9 ~2008.5.6
Masayoshi YAMAMOTO	Japan	Supersymmetric field theories and string theory	2006.5.1 ~2009.2.28
Xianhui GE	Beijing	Black hole physics, cosmology and quantum gravity theory	2006.9.1 ~2008.8.31
FuWen SHU	Beijing	The quantum structure of black holes, Quantum gravity in aspects of string theory etc.	2007.9.1 ~2008.8.31
Sungyun KIM	Korea	Numerical simulation of physical systems	2007.9.1 ~2009.2.28
Yoshinori MATSUO	Japan	String theory; matrix models, AdS/CFT correspondence	2007.9.3 ~2009.8.31
Takuya TSUKIOKA	Japan	Topological field theory, String Theory	2007.9.17 ~2009.8.31
UnCheol LEE	Korea	Nonlinear Dynamics & Complex Time Series Analysis of Physiological Data	2008.5.19 ~2008.9.20
Mesfin ASFAW	Ethiopia	Biophysics, Soft matter physics and Statistical physics, Stochastic processes, Colloid and Interface science	2008.9.1 ~2009.8.31
Liming CAO	Beijing	AdS/CFT correspondence, Black hole theory	2008.9.1 ~2009.8.31
Vincent SACKSTEDER	USA	Path integrals applied to complex and disordered systems, mesoscopic physics, networks, and chaos, development of new linear scaling algorithms	2008.9.1 ~2009.8.31
Name	Nationality	Field	Period
Shingo TAKEUCHI	Japan	Precise confirmation of the gauge/gravity correspondence, Spontaneous symmetry breaking of SO(10) in the IIB matrix model	2008.9.1 ~2009.8.31
Chul-Moon YOO	Korea	General Relativity, Cosmology	2008.9.1 ~2009.8.31
Shin NAKAMURA	Japan	Application of AdS/CFT to QCD, Baryon chemical potential in AdS/CFT and holographic description of time-dependent hydrodynamic systems of YM theories	2008.12.1 ~2009.3.31

☐ List of Junior YST

Name	Nationality	Field	Period
Galbadrakh DAGVADORJ	Mongolia	Bose-Einstein condensation in cold atoms, ultracold atoms in optical lattice and its applications	2008.9.9 ~2009.2.28

7. AP Scientist Network Activities in 2008

▲ Aim

- Motivate and nurture young scientists in the Asia Pacific region to become global leaders in the future
- Foster the top brain network in Asia Pacific and promote science communication among the public
- Create and distribute the highest-quality scientific literary contents to bring a maximum impact through the AP scientist network

▲ Creation and distribution of high-quality scientific literary contents by the AP scientist network

- Publishing the Online web-journal "Crossroads"

Year	2005(Oct. ~ Dec.)	2006(Jan. ~ Dec.)	2007(Jan. ~ Dec.)	2008(Jan. ~ Dec.)
Total Unique	4,763	33,956	41,300	46,606
(Total Visits)	(16,299)	(91,554)	(84,312)	(255,531)

	Korea	USA	Japan	Canada	China	UK	Germany	Etc.
2005	3,918	526	115	28	8	7	-	161
2006	16,871	13,431	122	249	430	93	425	2,335
2007	17,094	8,145	35	224	1,556	148	275	13,823
2008	28,316	6,537	275	135	2,947	73	112	8,211

- Lead the vision for Science, Future and Humanity
- Published in both English(global version) and Korean(local version)
- Published monthly: Volume 4 Issue1(January) ~ Volume 4 Issue 12(December)
- Total articles: 83
(Editorial 11, Features 14, Essays 24, SF 11, Window to Asia 6, Column 7, HOT APCTP 10)
- Operates an editorial team
: Part-time Editors 5, Staff 1, Outsourcing, Translation and Graphic Design

- **Science Book publication**

- Published the 2nd SF series of Crossroads :
 - Title: "Absolute Body", October, 2008
 - Author: 12 people
- Published the 1st Essay series:
 - Title: "The Science calls me", November, 2008
 - Author: 30 people

▲ Science communicator network activities

- **Promoting science communication through literary contents**

- Public activity of "Science; Speaking through Books": 8 times
Popular science writers were invited to interact with readers, in particular, students in domestic library.

Year	2005	2006	2007	2008
Event(Participant)	5(111)	4(253)	4(200)	8(1120)

No	Topic	Period	Place	Speaker
1	『The death of a tree』	May 17, 2008	Changwon Library, Changwon	· Yun-Jeong Cha
2	『Harihara's science blog』	Jun. 7, 2008	Chuncheon Lifelong Education Information Center, Chuncheon	· Eun-Hui Lee
3	『Snail - The moon and a top』	Jul. 12, 2008	Pyongtaek Branch of Gyeonggi Province Central Library, Pyongtaek	· O-Gil Gwon
4	『Space Concert』	Jul. 26, 2008	Cheonan City SSangyong Library, Cheonan	· Ui-Gyeong Tae
5	『Mathematics Vitamin』	Sep. 6, 2008	Naeson Library, Uiwang	· Gyeong-Mi Park
6	『Science in Harry Potter』	Sep. 26, 2008	Chungbuk Education Culture Center, Cheongju	· Geong-Mo Lee
7	『Alternative Dream』	Oct. 11, 2008	The Gumi Provincial Library of Gyeongbuk	· Geo-Il Bok
8	『Science Bicycle with three wheels』	Oct. 24, 2008	Mokpo City Library	· Yang-Gu Gang

- Science Communication School : 2 times, 48 Participant

The university students in science and engineering who had been selected on the applicants were trained as Science Communicators through science writing & debating programs at the Center.

- "Best Science Book 10" Selected by APCTP : November, 2008. The best science books were selected and promoted by APCTP for wide readership.

• **To show the vision, future and humanity to young scientists in Asia Pacific**

- APCTP-POSTECH Distinguished Lecture Series: 3 times

Public lectures by Asia Pacific Scientists on the topics of physics and beyond. Jointly organized with POSTECH-APCTP.

Year	2005	2006	2007	2008
Event(Participant)	5(208)	5(209)	3(105)	3(95)

No	Topic	Period	Place	Speaker
1	Two dimensional solids and superfluid	Jun. 16, 2008	APCTP Headquarters, Pohang, Korea	J. Michael Kosterlitz
2	Spin Motive Force and Spin Hall Effect in Magnetic Nanostructure	Aug. 25, 2008	APCTP Headquarters, Pohang, Korea	Prof. Sadamichi Maekawa
3	Black Hole Information Loss---Hawking's Greatest Mistake	Oct. 29, 2008	APCTP Headquarters, Pohang, Korea	Prof. Don N. Page

- Science in City Hall: 2 times

High Quality Science Contents combined with Science, Education, Art, and Experience

Year	2008
Event(Participant)	2(1200)

No	Topic	Period	Place	Speaker
1	『Science in City Hall』 with The Korean Academy of Science and Technology-KAST Distinguished Lecture by a Nobel laureate in Chemistry & 'Science Magic Show'	Mar. 29, 2008	Pohang City Hall	Y. T. Lee

2	『The 2nd Science in City』 Hall-The 1st Korean Astronaut & 'Science Drama Copenhagen'	Sep. 24, 2008	Pohang City Hall	· So-Yeon Lee
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- Science Communication Forum/Lecture: 5 times

A small, intensive forum for communicating multi-disciplinary ideas between science and society at the Center.

Year	2005	2006	2007	2008
Event(Participant)	7(635)	6(525)	6(623)	5(803)

No	Topic	Period	Place	Speaker
1	Science Tour	Jan. 23-24	POSTECH & Pohang Accelerator Laboratory, etc.	—
2	The story of the writer Ji-Young Gong	Jun. 13, 2008	Postech Infomation Research Laboratories, POSTECH	· Ji-Young Gong
3	The nature of technology innovation	Jun. 25, 2008	APCTP Headquarters, Pohang, Korea	· Seok-Sik Choi
4	'From global to local : Solution to our social, environmental, cultural and economic crisis	Oct. 27, 2008	APCTP Headquarters, Pohang, Korea	· Helena Norbery-Hodge
5	Are you the owner of your heart?	Nov. 24, 2008	APCTP Headquarters, Pohang, Korea	· Buddhist Monk Maga

● **Promote the science awareness among public**

- "The 5th Pohang family Science Festival": Jointly held with Pohang City, September, 2008.
*About 17,700 people participated.
- "Sol-bat Concert with Science": October, 2008. The Science culture show for local audience, supported partially by the Center.
*About 2,000 people participated.
- "The Korean Physical Society 2008 Chungye/Chungye Association"
: April / October, 2008

8. Brief Summary of Financial Statements

(May 1996 - December 2008)

(Unit: million Korean Won)

Fiscal year	May 1996 ~ Aug 1997	Sep 1997 ~ May 1998	Jun 1998 ~ Feb 1999	Mar 1999 ~ Feb 2000	Mar 2000 ~ Feb 2001	Mar 2001 ~ Feb 2002	Mar 2002 ~ Dec 2002	Jan 2003 ~ Dec 2003	Jan 2004 ~ Dec 2004	Jan 2005 ~ Dec 2005	Jan 2006 ~ Dec 2006	Jan 2007 ~ Dec 2007	Jan 2008 ~ Dec 2008
Activities	444 /172	157 /161	300 /183	129 /272	125 /148	0 /300	0 /158	540 /0	540 /0	600 /0	600 /0	700 /0	700 /0
Joint researches	364 /59	489 /224	168 /211	76 /24	78 /43	0 /104	0 /121	160 /0	160 /0	200 /0	200 /0	400 /0	1,000 /0
Operation & management expenses	142 /0	254 /0	320 /0	227 /40	297 /129	200 /296	200 /121	0 /400	0 /400	0 /400	0 /350	0 /500	0 /1,000
Science Communication										700 /200	400 /150	400 /0	400 /0
Total	950 /231	900 /385	788 /394	432 /336	500 /320	200 /700	200 /400	700 /400	700 /400	1500 /600	1200 /500	1500 /500	2,100 /1,000

(Korean Government Fund / Non Government Fund)

9. Facilities

▲ Office

• Headquarters

- Mueunjae Building 5th floor, Pohang University of Science and Technology (POSTECH) San 31, Hyoja-dong, Pohang, Kyungbuk 790-784, Korea
- Tel : +82-54-279-8661~5 Fax : +82-54-279-8679
- E-mail : sec@apctp.org
- 1,059 m^2
- Seminar and Lecture rooms are provided

• Seoul Branch Office

- 635-4 Yoksam-dong, Kangnam-gu, Seoul 135-703, Korea
- Tel : +82-2-561-7641/2 Fax : +82-2-561-7140
- E-mail : sec@apctp.org
- 50 Pyung = 315 m^2
- Seminar and Lecture rooms are provided

▲ Guest Houses

- 6 apartments (#6-904, #6-1004, #6-1502, #6-1504, #5-403, #8-1002)
- Faculty Apartment, Jigok-dong, Pohang, Kyungbuk, Korea
- Tel: +82-54-279-3931, 3949, 3974, 3927, 3906, 3933
- Each apartment with 3 Rooms (31 Pyung = 102 m^2)

▲ Nakwon Apartment

- 3 apartments (2-#306, 2-#503, 3-#401)
- Nakwon Apartment, Jigok-dong, Pohang, Kyungbuk, Korea
- Tel: +82-54-279-0748, 0876, 0779
- Each apartment with 3 Rooms (24 Pyung = 79 m^2)

10. Appendix

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2) AP Scientist Network Activities

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B. Circulars of “Science : Speaking through Book	493
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▲ 2008. 1. - 2008. 12.	

3) Activity Calendar of the APCTP in 2008

529

4) Contract with the KOSEF

539

1) Scientific Activities

A. Circulars of Winter Schools and Workshops

▲ 2008. 1. - 2008. 12.

● The 12th APCTP Winter Workshop on Strongly Correlated Electron Systems (January 20~26 / APCTP Headquarters, Pohang, Korea)	35
● APCTP Winter School on Black Hole Astrophysics 2008 (January 24~29 / APCTP Headquarters, Pohang and KASI, Daejeon, Korea)	48
● 5th APCTP-KIAS Winter School on Statistical Physics (January 28~31 / Phoenix Park, Gangwondo, Korea)	54
● APCTP / CQUeST Field Theory Winter School 2008 (February 18~22 / APCTP Headquarters, Pohang, Korea)	60
● YongPyong Astro-Particle and Conformal Topical Physics 2008 (February 25~29 / YongPyong Ski Resort, Korea)	63
● The 24th Workshop on Numerical Relativity (March 29 / APCTP Seoul Branch Office, Seoul, Korea)	69
● APCTP Spring Meeting on The Spacetime Structure in General Relativity and Gravitation (April 18~19 / International Conference Hall in KISTI, Daejeon, Korea)	70
● Heavy Ion Meeting 2008-04 (April 19 / University of Seoul, Seoul, Korea)	73
● Mini-workshop on field theory (May 17~18 / Academyhouse, Seoul, Korea)	75
● The 1st Workshop for Emergent Materials Research (May 23~24 / PIC, POSTECH, Pohang, Korea)	76
● The 32nd Johns Hopkins Workshop on Perspectives in String Theory (May 28~31 / Seoul National University, Seoul, Korea)	77
● The 25th Workshop on Numerical Relativity (June 14 / APCTP Seoul Branch Office, Seoul, Korea)	82
● AMO 2008(Atomic Molecular and Optical Physics) (June 19~20 / Muju Resort, Jeonbuk, Korea)	83

● 2008 2nd Laboratory, space, and astrophysical plasma workshop (June 21~22 / PIC, POSTECH, Pohang, Korea)	87
● Nuclear Physics School 2008 (June 30~July 4 / Korea University, Seoul, Korea)	91
● Heavy Ion Meeting 2008-07 (July 11~12 / Pusan National University, Busan, Korea)	101
● The 6th International Symposium on Intrinsic Josephson Effect and Plasma Oscillations in High-Tc Superconductors (PLASMA 2008) (July 17~19 / PIC, POSTECH, Pohang, Korea)	103
● The 3rd APCTP-KAIST Summer School for Brain Dynamics (July 17~18 / KAIST, Daejeon, Korea)	121
● 2008 APCTP Summer School on Strongly Correlated Electron System (July 21~23 / KIAS, Seoul, Korea)	122
● 2008 International Summer School on Computational Methods in Gravitation and Astrophysics (July 28~August 1 / APCTP Headquarters, Pohang, Korea)	125
● The 8th Summer Institute for Theoretical Physics (August 4~15 / International Conference Hall, KIAS, Seoul, Korea)	140
● APCTP 2008 LHC Physics Workshop at Korea (August 19~21 / Konkuk University, Seoul, Korea)	150
● The 30th International Free Electron Laser Conference (August 24~29 / Hotel Hilton, Gyeongju, Korea)	154
● The 27th Workshop on Numerical Relativity (September 8 / Daejeon Convention Center, Daejeon, Korea)	165
● Recent Developments in String M Theory (September 22~26 / International Conference Hall, KIAS, Seoul, Korea)	166
● The 3rd IUPAP International Conference on Women in Physics 2008 (October 8~10 / Sofitel Ambassador Hotel, Seoul, Korea)	170
● 4th Asian conference on High pressure research (October 14~17 / Seoul National University, Seoul, Korea)	173
● Gwangju String Theory Workshop (October 24~26 /Gwangju, Korea)	188
● CosPA2008(Cosmology and Particle Astrophysics 2008) (October 28 ~November 1 / PIC, POSTECH, Korea)	191

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● Heavy Ion Meeting 2008-11 (November 14~16 / APCTP Headquarters, Pohang, Korea)	213
● The 28th Workshop on Numerical Relativity (November 21~22 / Inje University, Busan, Korea)	218
● The 18th Workshop on Nanoscale and Mesoscopic Systems (December 5~6 / POSTECH, Pohang, Korea)	220
● The 1st APCTP Workshop on Multiferroic (December 11~16 / APCTP Headquarters, Pohang, Korea)	241
● 2008 APCTP Astrophysics Winter school (December 15~16 / Ewha Womans University, Seoul, Korea)	244
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1) Scientific Activities

B. Circulars of Focus Programs

▲ 2008. 1. - 2008. 12.

-
- Quantum Field Theory and Mathematical Physics (January 6~15 / APCTP Headquarters, Pohang, Korea) 249
 - Finite-size technology in low dimensional quantum system (IV) (June 25~July 15 / APCTP headquarters, Pohang, Korea) 258
 - Focus Program on Molecular Dynamics Simulations on Nano/Micro Systems (August 4~12 / APCTP headquarters, Pohang, Korea) 264
 - APCTP Focus Program on Unsolved theoretical problems in quantum transport of electrons (August 14~27 / APCTP Headquarters, Pohang, Korea) 271
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1) Scientific Activities

C. Circulars of Joint Activities

▲ 2008. 1. - 2008. 12.

● APCTP-YITP Workshop on Accretion and Outflow in Astrophysics and the second Korea-Japan Young Astronomers Meeting (January 8~11 / Honnouji Kaikan, Kyoto, Japan)	279
● The 2nd Asian Winter School on String Theory (January 15~25 / Kusatsu-Machi, Agatsuma-Gun Gunma, Japan)	294
● 2008 APCTP-BLTP JINR Joint Workshop on "Quarks and Mesons in Nuclear Physics" (April 20~24 / APCTP Headquarters, Pohang, Korea)	299
● Summer School on Particles, Fields and Strings (July 22~ August 1 / University of British Columbia, Vancouver, Canada)	314
● Summer School on Time-Resolved X-Ray Processes in Atoms, Molecules and Solids & International Workshop on Time-Resolved X-Ray Dynamics (July 29~August 8 / MPI-PKS, Dresden, Germany)	327
● APCTP-ASEAN WORKSHOP ON ADVANCED MATERIALS SCIENCE AND NANOTECHNOLOGY (September 15~21 / Nha Trang, Vietnam)	342
● Black Holes: Theoretical, Mathematical and Computational aspects (November 9~14 / Banff Int'l Research Station, Alberta, Canada)	360

1) Scientific Activities

D. Circulars of External Activities

▲ 2008. 1. - 2008. 12.

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● 14th Vietnam School of Physics (January 3~16, 2008 / Quy-Nhon University, Vietnam)	369
● 2008 Taitung International School/Workshop on Cosmology and Gravitation (January 7~10, 2008 / National Taitung University, Taitung, Taipei)	378
● 21st Spring School On Particles & Fields (March 31~April 3, 2008 / Institute of Physics, NCTU, Taipei)	388
● Fourth Asia Pacific Conference in Quantum Information Science (July 2~5, 2008 / Cairns, Queensland, Australia)	403
● Summer institute 2008 (August 10~17, 2008 / Chi-Tou, Taipei)	419
● Dynamics Days Asia Pacific 5 (DDAP5) (September 9~12, 2008 / Nara, Japan)	425
● What is Creativity? Emergent Phenomena in Complex Adaptive Systems (October 20~22, 2008 / Co-op Inn Kyoto Conference Hall, Japan)	452
● The 11th Asian Workshop on First-Principles Electronic Structure Calculations (November 3~5, 2008 / Nat'l Sun Yat-sen University, Taipei)	
● 22nd Canberra International Physics Summer School: Complex Physical, Biophysical and Econophysical Systems (December 9~18, 2008 / The Australian National University, Canberra, Australia)	456
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1) Scientific Activities

E. List of Research Papers

APCTP Reprints

Authors and Titles for 2008

No	Authors	Title	Journal Volume, Page (Year)
1	Yu-Xian Li, Han-Yong Choi, Hyun-Woo Lee	Flux-dependent transport through an Aharonov-Bohm interferometer with embedded multiple coupled quantum dots	Physics Letters A, 372, 2073~2078
2	V Thanh Ngo, H T Diep	Stacked Triangular XY Antiferromagnets: End of a Controversial Issue on the Phase Transition	Journal of Applied Physics, 103, 07C712-1~07C712-3
3	Daun Jeong, M. Y. Choi, YounJoon Jung, Hyung J. Kim	1/f spectrum and memory function analysis of solvation dynamics in a room-temperature ionic liquid	Journal of Chemical Physics, 128, 174504-1~174504-7
4	SJ Jo, H Kang, M Y Choi, J Choi, B-G Yoon	Criticality in the dynamic failure model	Journal of Physics A: Mathematical and Theoretical, 41, 145101-1~145101-7
5	Gun Sang Jeon, Sung Jong Lee, Bongsoo Kim, M. Y. Choi	Relaxation dynamics and interrupted coarsening in irrationally frustrated superconducting arrays	Physical Review B, 78, 024523-1~024523-8
6	Changrim Ahn, Rafael I. Nepomechie	The Zamolodchikov-Faddeev algebra for open strings attached to giant gravitons	Journal of High Energy Physics, 05
7	D. Ahn, Y.H. Moon, R.B.Mann, I. Fuentes-Schuller	The black hole final state for the Dirac fields in Schwarzschild spacetime	Journal of High Energy Physics, 06
8	Dmitri V. Fursaev	Entanglement entropy in quantum gravity and the plateau problem	Physical Review D, 77, 124002-1~124002-14
9	Don N. Page	Typicality derived field	Physical Review D, 78, 023514-1~023514-7

No	Authors	Title	Journal Volume, Page (Year)
32	Mean-Hwan Kim, Bo-Hwa Choi, Seung-Ryoung Jung, Thomas J. Sernka, Seunghwan Kim, Kyong-Tai Kim, Bertil Hille, Toan D. Nguyen, and Duk-Su Ko	Protease-activated Receptor-2 Increases Exocytosis via Multiple Signal Transduction Pathways in Pancreatic Duct Epithelial Cells	The Journal of Biological Chemistry, 283, 18711~18720
33	Cheoljun Eom, Woo-Sung Jung, Sunghoon Choi, Gabjin Oh, Seunghwan Kim	Effects of time dependency and efficiency on information flow in financial markets	Physica A, 387, 5219~5224
34	Yu-Xian Li, Han-Yong Choi, Hyun-Woo Lee	Nonequilibrium Kondo effect and Andreev reflection through double quantum dots with spin-flip scattering	Physics Letters A, 372, 6424~6428
35	Ara Go, Gun Sang Jeon	Cellular Dynamical Mean-Field Theory for the One-Dimensional Ionic Hubbard Model	Journal of the Korean Physical Society, 53, 1006~1009
36	Ji-Woo Lee, Min-Chul Cha	Phase Transitions in a Hard-Core Boson Model in Two Dimensions	Journal of the Korean Physical Society, 52, S162~S165
37	Michael R. Peterson, Kwon Park, S. Das Sarma	Spontaneous Particle-Hole Symmetry Breaking in the $\nu = 5/2$ Fractional Quantum Hall Effect	Physical Review Letters, 101, 156803-1~156803-4
38	Bohm-Jung Yang, Yong Baek Kim, Jaejun Yu, Kwon Park	Spin triplet excitations for a valence bond solid on the kagome lattice	Physical Review B, 77, 224424-1~224424-12
39	Bohm-Jung Yang, Yong Baek Kim, Jaejun Yu, Kwon Park	Doped valence-bond solid and superconductivity on the Shastry-Sutherland lattice	Physical Review B, 77, 104507-1~104507-10
40	Sang Pyo Kim, Hyun Kyu Lee, Yongsung Yoon	Effective action of QED in electric field backgrounds	Physical Review D, 78, 105013-1~105013-10
41	Yunkyu Bang	Possible pairing states of the Fe-based superconductors	Physical Review B, 78, 075116-1~075116-10
42	Sang Pyo Kim	Dynamical Theory of Phase Transitions and Cosmological EW and QCD Phase Transitions	Modern Physics Letter A, 21, 1325~1335

No	Authors	Title	Journal Volume, Page (Year)
43	Sang Pyo Kim	Schwinger Mechanism and Hawking Radiation as Quantum Tunneling	Journal of the Korean Physical Society, 53, 1095~1099
44	Sang Pyo Kim, Don N. Page	Schwinger pair production in dS2 and AdS2	Physical Review D, 78, 103517-1~103517-5
45	Hyungtae Kook, Sang-Gui Lee, Seung Kee Han	Synchronization of Neuronal Oscillator Network with Time-Delayed Connections	Progress of Theoretical Physics Supplement, 173, 251~263
46	Cheoljun Eom, Gabjin Oh, Seunghwan Kim	Statistical Investigation of Connected Structures of Stock Networks in a Financial Time Series	Journal of the Korean Physical Society, 53, 3837~3841
47	Gungwon Kang, Changheon Oh, Chul H. Lee	Stability of the AdS Soliton Spacetime	Journal of the Korean Physical Society, 53, 1106~1109

APCTP Proceeding

Editors and Titles for 2008

No.	Editors	Title	Remarks
1	Doochul KIM Hyeonsik CHEONG Moo Hyun CHO Jin Hyuk CHOI Seong Youl CHOI Kyunghwan OH Chul Hong PARK Je-Geun PARK Kyoungwan PARK Jaejun YU	Journal of the Korean Physical Society December 2008 Special Issue on the 10th Asia Pacific Physics Conference Volume 53, No.6 (Pt I)	Proceeding

No	Authors	Title	Journal Volume, Page (Year)
43	Sang Pyo Kim	Schwinger Mechanism and Hawking Radiation as Quantum Tunneling	Journal of the Korean Physical Society, 53, 1095~1099
44	Sang Pyo Kim, Don N. Page	Schwinger pair production in dS2 and AdS2	Physical Review D, 78, 103517-1~103517-5
45	Hyungtae Kook, Sang-Gui Lee, Seung Kee Han	Synchronization of Neuronal Oscillator Network with Time-Delayed Connections	Progress of Theoretical Physics Supplement, 173, 251~263
46	Cheoljun Eom, Gabjin Oh, Seunghwan Kim	Statistical Investigation of Connected Structures of Stock Networks in a Financial Time Series	Journal of the Korean Physical Society, 53, 3837~3841
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APCTP Preprints

Authors and Titles for 2008

Preprint No.	Authors	Title	Remarks
APCTP 2008-007	Masanori Hanada, Akitsugu Miwa, Jun Nishimura , Shingo Takeuchi	Schwarzschild radius from Monte Carlo calculation of the Wilson loop in supersymmetric matrix quantum mechanics	Preprint
APCTP 2008-008	Masanori Hanada, Yoshifumi Hyakutake, Jun Nishimura , Shingo Takeuchi	Higher derivative corrections to black hole thermodynamics from supersymmetric matrix quantum mechanics "	Preprint
APCTP 2008-009	Keitaro Takahashi, Atsushi Naruko, Yuuiti Sendouda, Daisuke Yamauchi, Chul-Moon Yoo and Sasaki	Non-Gaussianity in Cosmic Microwave Background Temperature Fluctuations from Cosmic (Super-)Strings	Preprint
APCTP 2008-010	Tatsuo Azeyanagi, Masanori Hanada, Hikaru Kawai and Yoshinori Matsuo	Worldsheet Analysis of Gauge/Gravity Dualities	Preprint

2) AP Scientist Network Activities

A. Circulars of web journal "Crossroads"

▲ 2008. 1. - 2008. 12.

● Vol. 3 Issue 1	(January 1/ APCTP Headquarters, Pohang, Korea)	481
● Vol. 3 Issue 2	(February 1/ APCTP Headquarters, Pohang, Korea)	482
● Vol. 3 Issue 3	(March 1/ APCTP Headquarters, Pohang, Korea)	483
● Vol. 3 Issue 4	(April 1/ APCTP Headquarters, Pohang, Korea)	484
● Vol. 3 Issue 5	(May 1/ APCTP Headquarters, Pohang, Korea)	485
● Vol. 3 Issue 6	(June 1/ APCTP Headquarters, Pohang, Korea)	486
● Vol. 3 Issue 7	(July 1/ APCTP Headquarters, Pohang, Korea)	487
● Vol. 3 Issue 8	(August 1/ APCTP Headquarters, Pohang, Korea)	488
● Vol. 3 Issue 9	(September 1/ APCTP Headquarters, Pohang, Korea)	489
● Vol. 3 Issue 10	(October 1/ APCTP Headquarters, Pohang, Korea)	490
● Vol. 3 Issue 11	(November 1/ APCTP Headquarters, Pohang, Korea)	491
● Vol. 3 Issue 12	(December 1/ APCTP Headquarters, Pohang, Korea)	492

2) AP Scientist Network Activities

B. Circulars of “Science : Speaking through Book”

▲ 2008. 1. - 2008. 12.

● 『The death of a tree』 (May 17 / Changwon Library, Changwon)	495
● 『Harihara's science blog』 (Jun. 7 / Chuncheon Lifelong Education Information Center, Chuncheon)	496
● 『Snail - The moon and a top』 (Jul. 12 /Pyongtaek Branch of Gyeonggi Province Central Library, Pyongtaek)	497
● 『Space Concert』 (Jul. 26 / Cheonan City SSangyong Library, Cheonan)	498
● 『Mathematics Vitamin』 (Sep. 6 / Naeson Library, Uiwang)	499
● 『Science in Harry Potter』 (Sep. 26 / Chungbuk Education Culture Center, Cheongju)	500
● 『Alternative Dream』 (Oct. 11 / The Gumi Provincial Library of Gyeongbuk)	501
● 『Science Bicycle with three wheels』 (Oct. 24 / Mokpo City Library	502

2) AP Scientist Network Activities

C. Circulars of APCTP Distinguished Lectures

▲ 2008. 1. - 2008. 12.

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- Two dimensional solids and superfluid (Jun. 16 / APCTP Headquarters,
Pohang, Korea) 505
 - Spin Motive Force and Spin Hall Effect in Magnetic Nanostructure (Aug.
25 / APCTP Headquarters, Pohang, Korea) 506
 - Black Hole Information Loss---Hawking's Greatest Mistake
(Oct. 29 / APCTP Headquarters, Pohang, Korea) 507
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2) AP Scientist Network Activities

D. Circulars of Science Communication Forum / Lecture

▲ 2008. 1. - 2008. 12.

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- Science Tour
(Jan. 23-24 / POSTECH & Pohang Accelerator Laboratory, etc.)
 - The story of the writer Ji-Young Gong
(Jun. 13 / Postech Information Research Laboratories, POSTECH)
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 - The nature of technology innovation
(Jun. 25 / APCTP Headquarters, Pohang, Korea)
 - ‘From global to local : Solution to our social, environmental, cultural
and economic crisis
(Oct. 27 / APCTP Headquarters, Pohang, Korea) 512
 - Are you the owner of your heart?
(Nov. 24 / APCTP Headquarters, Pohang, Korea) 513
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2) AP Scientist Network Activities

E. Circulars of Science communicator activities

▲ 2008. 1. - 2008. 12.

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- APCTP The 4th Science Communication winter School
(Feb. 14-16 / APCTP Headquarters, Pohang, Korea) 517
 - The Korean Physical Society 2008 Chungye Association
(Apr. 17-18 / Daejeon Convention Center, Daejeon, Korea)
 - APCTP The 5th Science Communication Summer School
(Aug. 12-14 / APCTP Headquarters, Pohang, Korea) 518
 - The Korean Physical Society 2008 Chugye Association
(Oct. 16-17 / Kimdaejung Convention Center, Gwangju, Korea)
 - "Sol-bat Concert with Science"
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 - "The 5th Pohang family Science Festival": Jointly held with Pohang City (Sep.
19-21 / Pohang, Korea) 522
 - "Best Science Book 10" selected by APCTP
(Dec. 2 / Seoul Koreana Hotel, Seoul, Korea) 524
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3) Activity Calendar of the APCTP in 2008

3) Activity Calendar of the APCTP in 2008

Month	Scientific Activities	AP Scientist Network Activities	Administrative Activities
Jan	<ul style="list-style-type: none"> • Topical Research Program <ul style="list-style-type: none"> - The 12th APCTP Winter Workshop on Strongly Correlated Electron Systems - APCTP Winter School on Black Hole Astrophysics 2008 - 5th APCTP-KIAS Winter School on Statistical Physics • Focus Program <ul style="list-style-type: none"> - Quantum Field Theory and Mathematical Physics • Joint Activity <ul style="list-style-type: none"> - APCTP-YITP Workshop on Accretion and Outflow in Astrophysics and the second Korea-Japan Young Astronomers Meeting - The 2nd Asian Winter School on String Theory • External Activity <ul style="list-style-type: none"> - 14th Vietnam School of Physics - 2008 Taitung Int'l School / Workshop on Cosmology and Gravitation 	<ul style="list-style-type: none"> - "Science Communication Forum/Lecture" : 『Science Tour』 (Jan. 23-24) 	<ul style="list-style-type: none"> - General Administration and Accounts of the Center - The Closed of Accounting FY2007 - A year-end Adjustment of the year 2008 - 2008 Contract with the KOSEF (Korea Science and Engineering Foundation) - Supporting APCTP-YITP Joint Activity/ \$ 10,000 - Supporting Joint Activity/ \$ 15,000 - Supporting External Activity (Vietnam) / \$ 5,000 - Supporting External Activity (Taiwan) / \$ 5,000

<p>Nov</p>	<ul style="list-style-type: none"> • Topical Research Program - Heavy Ion Meeting 2008-11 - The 28th Workshop on Numerical Relativity • Joint Activity - Black Holes: Theoretical, Mathematical and Computational aspects • External Activity - The 11th Asian Workshop on First-Principles Electronic Structure Calculations 	<ul style="list-style-type: none"> - "Science Communication Forum/Lecture": 『Are you the owner of your heart?』 by Buddhist Monk Maga (Nov. 24) 	<ul style="list-style-type: none"> - General Administration and Accounts of the Center - Supporting APCTP-TPI Joint Activity/ \$ 10,000 - Supporting External Activity (Taipei)/ \$ 5,000 - Supporting Coordinator's Meeting
<p>Dec</p>	<ul style="list-style-type: none"> • Topical Research Program - The 18th Workshop on Nanoscale and Mesoscopic Systems - 2008 APCTP Astrophysics Winter school • Conference & Workshop - The 1st APCTP Workshop on Multiferroic • External Activity - 22nd Canberra International Physics Summer School: Complex Physical, Biophysical and Econophysical Systems 	<ul style="list-style-type: none"> - "Best Science Book 10" selected by APCTP (Dec. 2) - Publication of the 20th-21th APCTP Bulletin 	<ul style="list-style-type: none"> - General Administration and Accounts of the Center - Supporting Science Council Meeting - Supporting External Activity (Australia)/ \$ 5,000 - Preparation for The Closed of Accounting FY2008