

2008 APS March Meeting, New Orleans, Louisiana

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Panel Discussion: International Gender Issues in Physics

Women in Physics in a Rapidly Changing China

Ling-An Wu

Institute of Physics, Chinese Academy of Sciences

Beijing, China

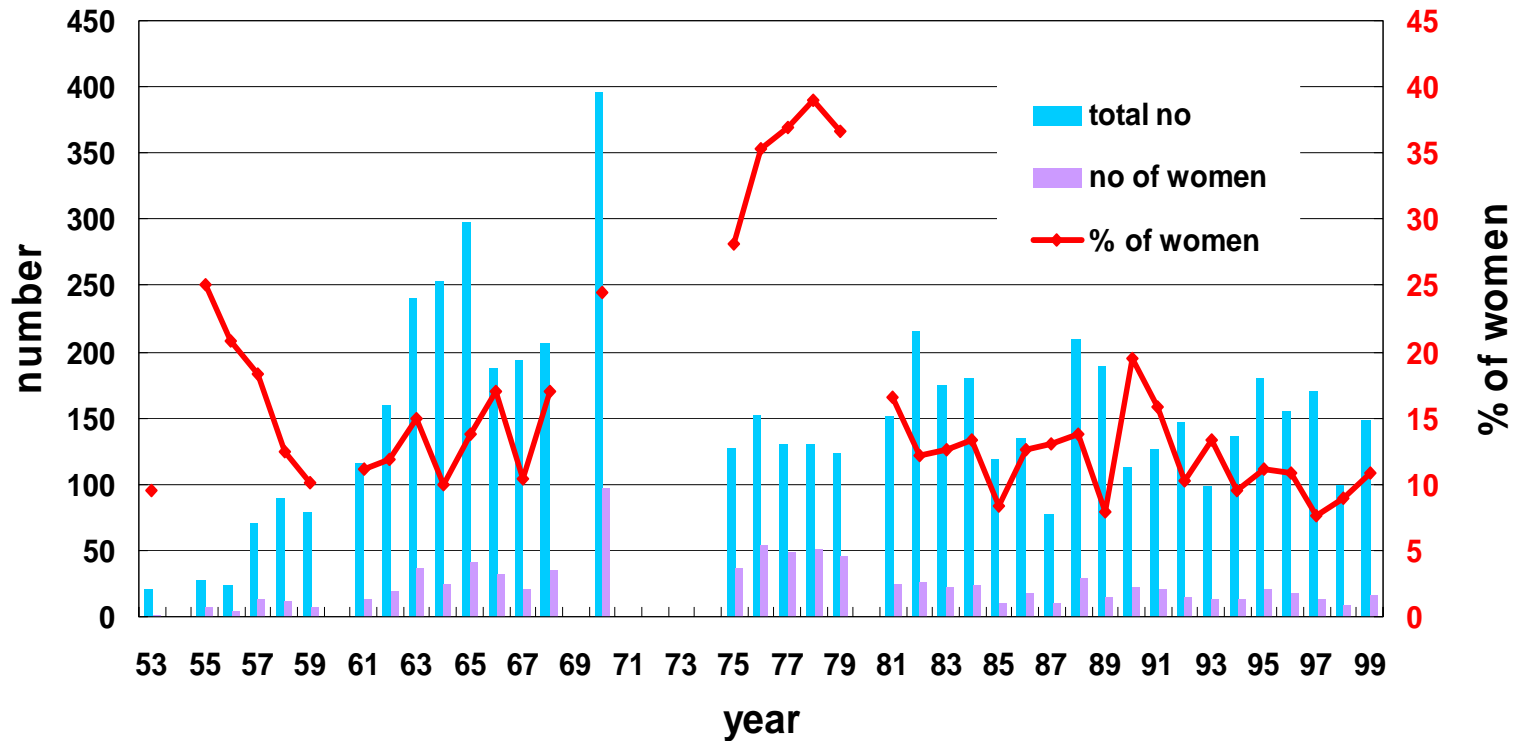
A Century of Phase Changes

- One of the fastest developing economies in the world
- Tremendous new opportunities for women in all fields including physics
- But new problems and challenges as social conditions fluctuate

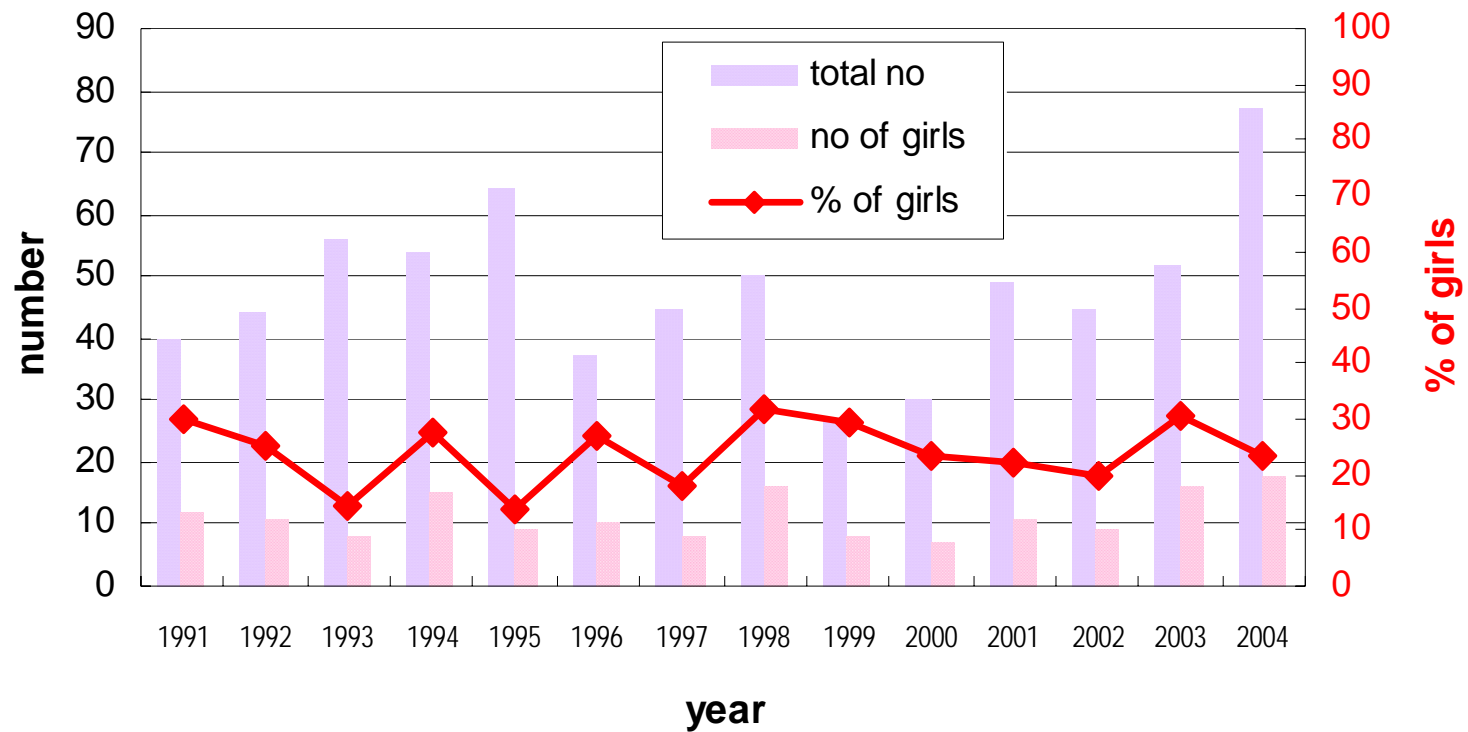
Is there a problem?

Are men and women “still equal”?

Physics Undergraduate Enrollment in Nanjing University

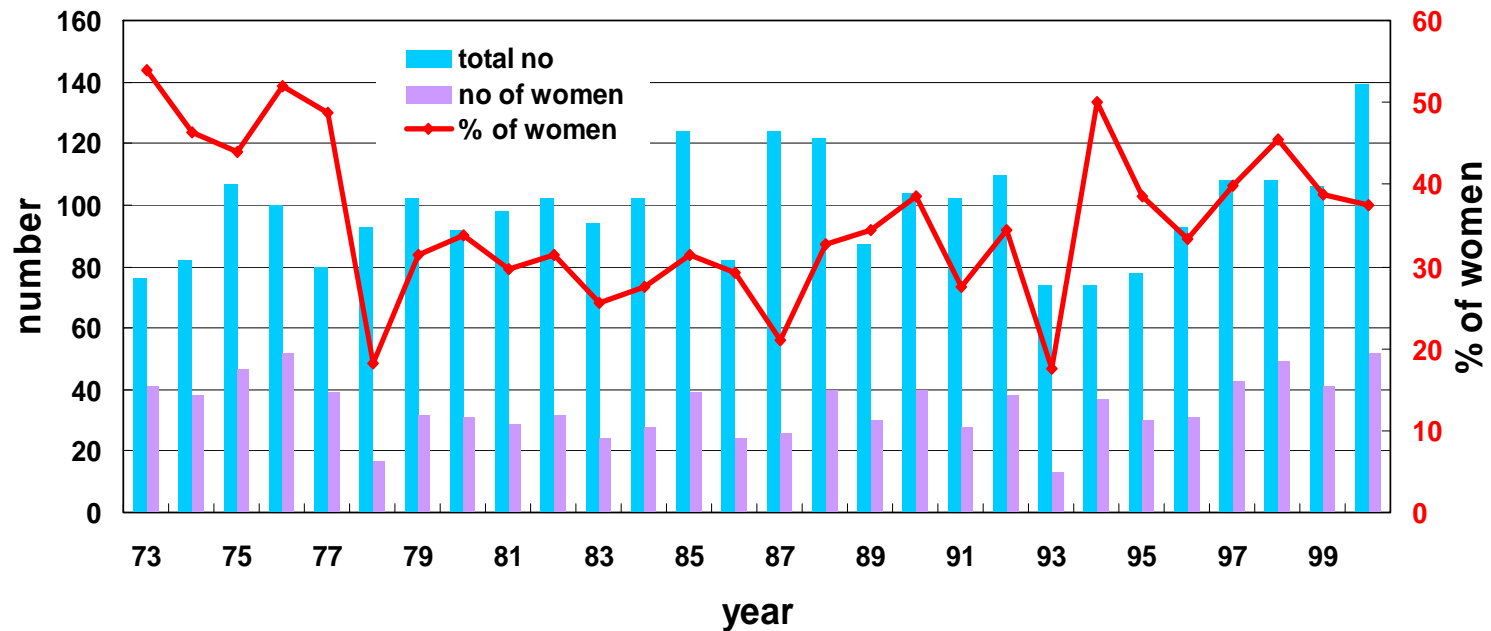


1991–2004 Peking Univ Senior High School No. of Graduates Admitted as Physics Majors



Physics Undergraduate Enrollment in Beijing Normal University

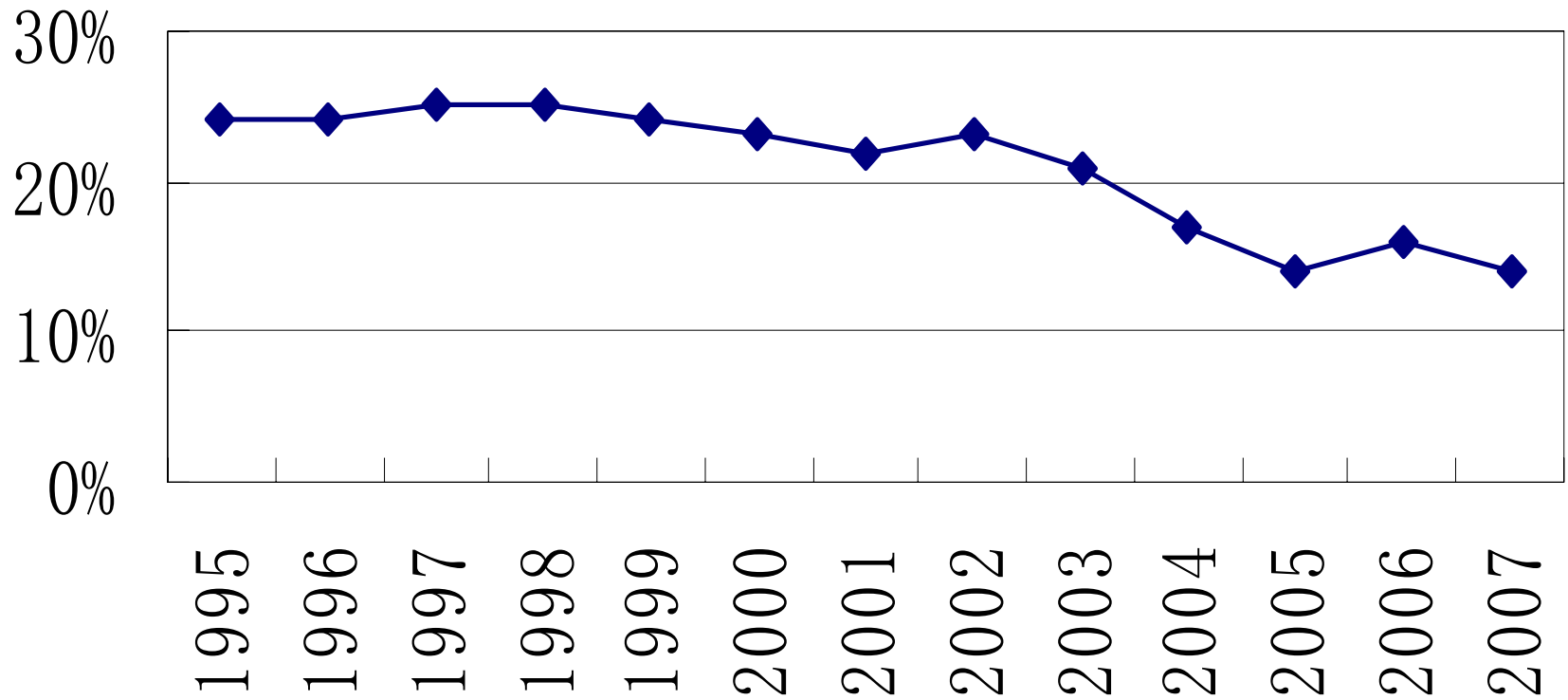
The ratio of female physics undergraduates in normal universities is consistently higher



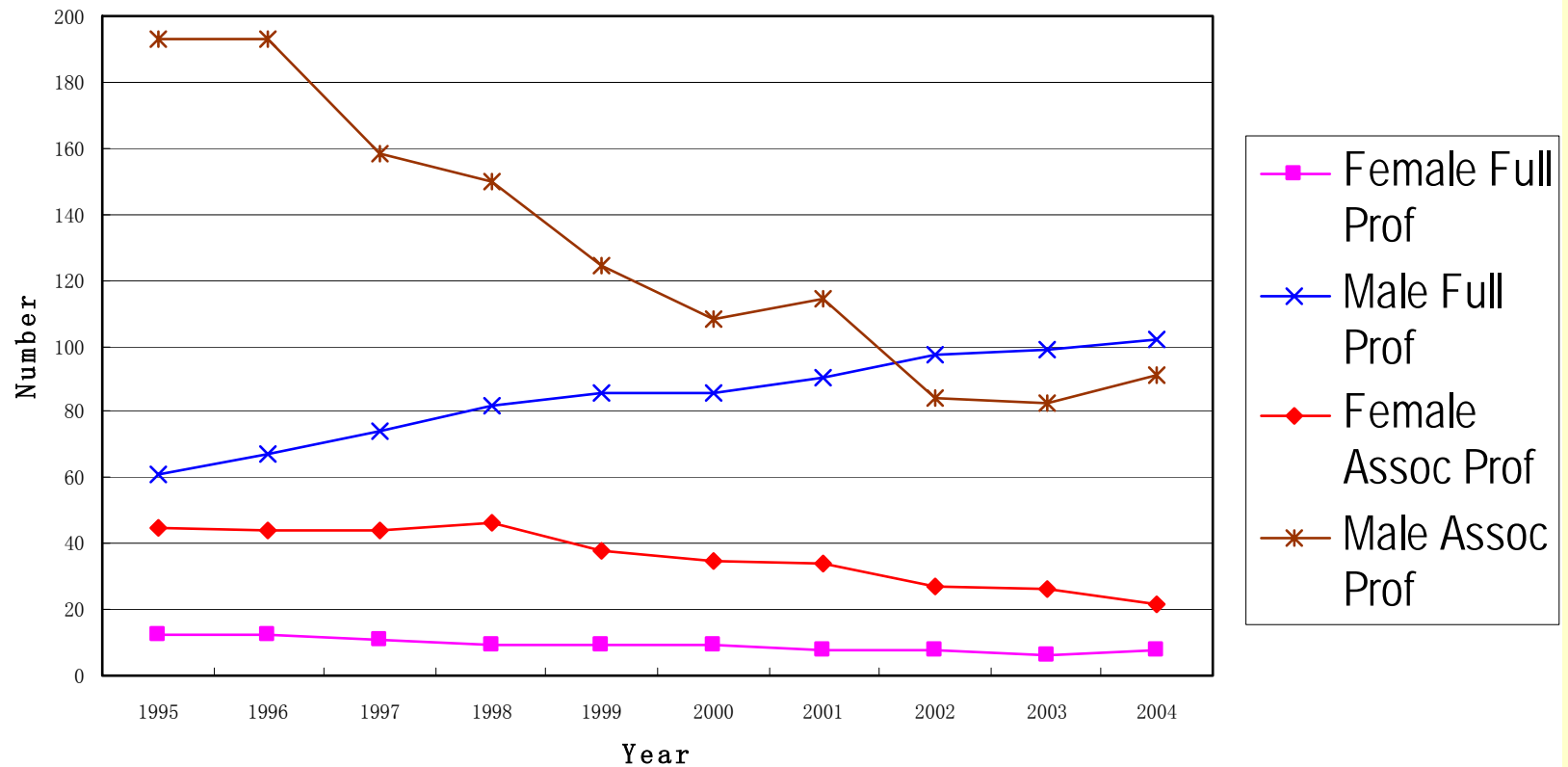
Physics Faculty in Shanghai Jiaotong (Communications) University

Year	Total No. Lecturers	No. Female Lecturers	Total No. Associate Prof	No. Female Assoc Prof	Total No. Full Prof	No. Female Full Prof
2001	16	4 25.0%	37	9 24.3%	35	1 2.8%
2004	16	7 43.0%	35	7 20.0%	37	3 8.0%

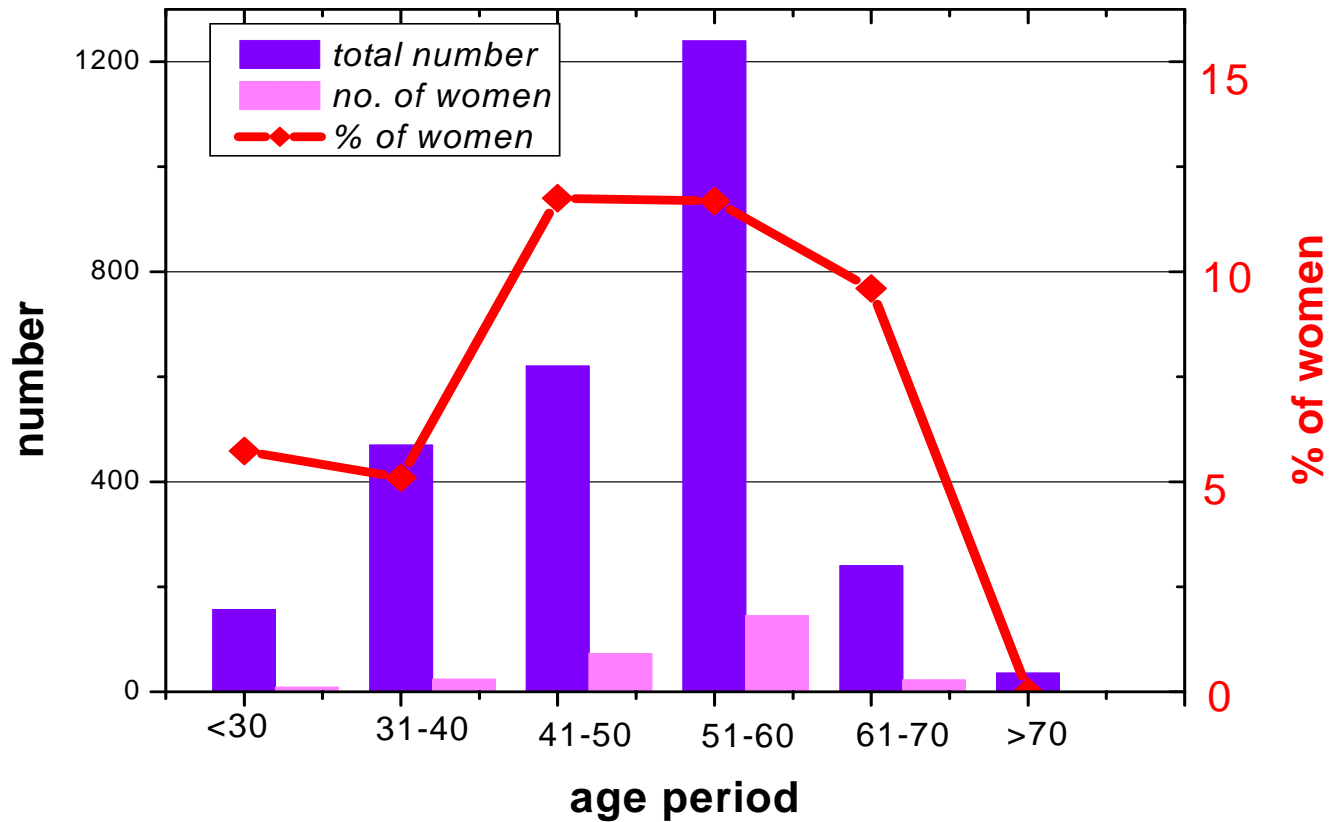
% Female Research Staff in Inst of Phys, CAS



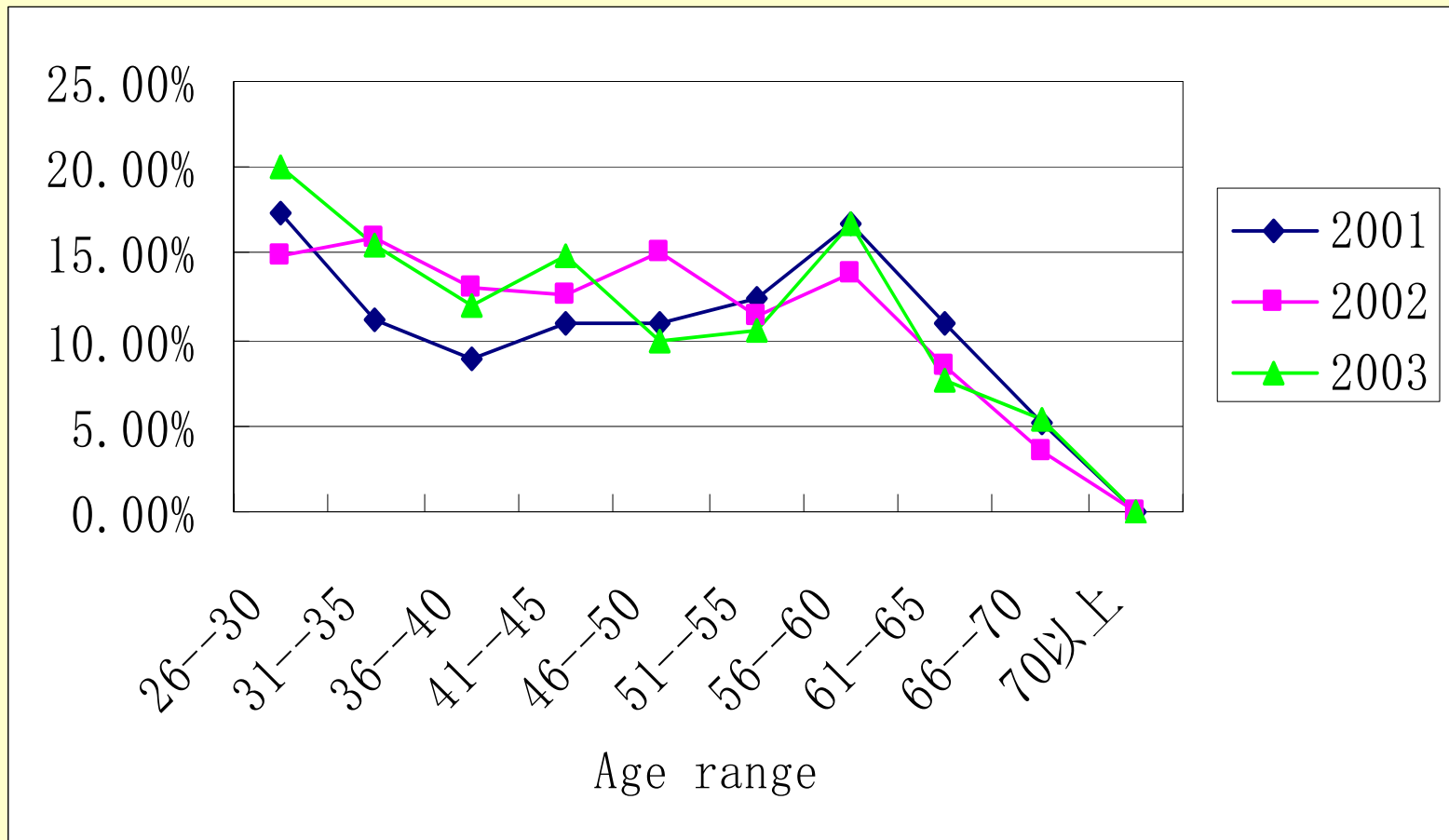
Number of senior research staff in CAS Institute of Physics 1995-2004



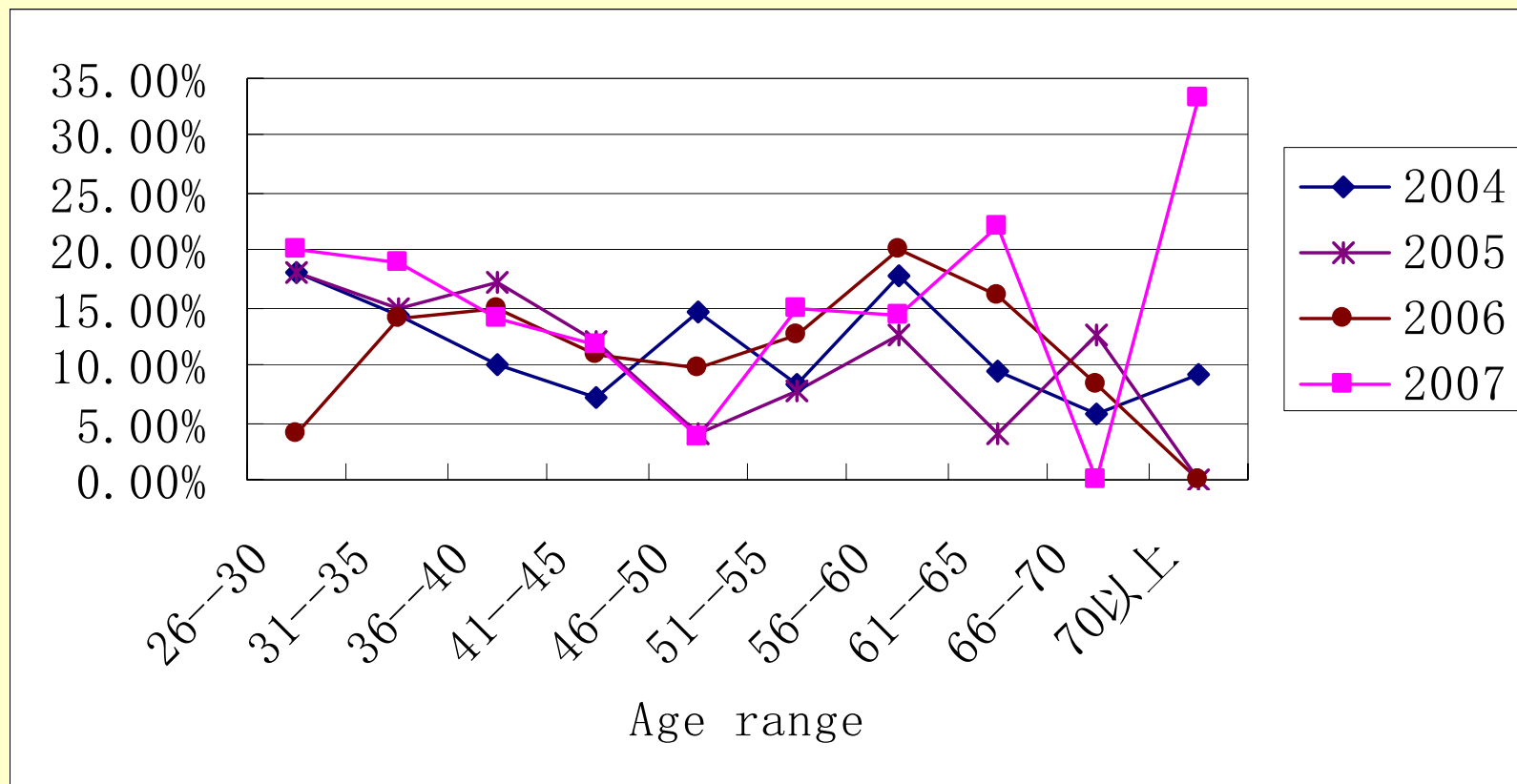
1986-2000 Ratio of Women Awarded NNSFC Grants in Physics



Ratio of Women Awarded Ordinary NNSFC Grants Ranked by Age (2001–2003)



Ratio of Women Awarded Ordinary NNSFC Grants Ranked by Age (2004–2007)

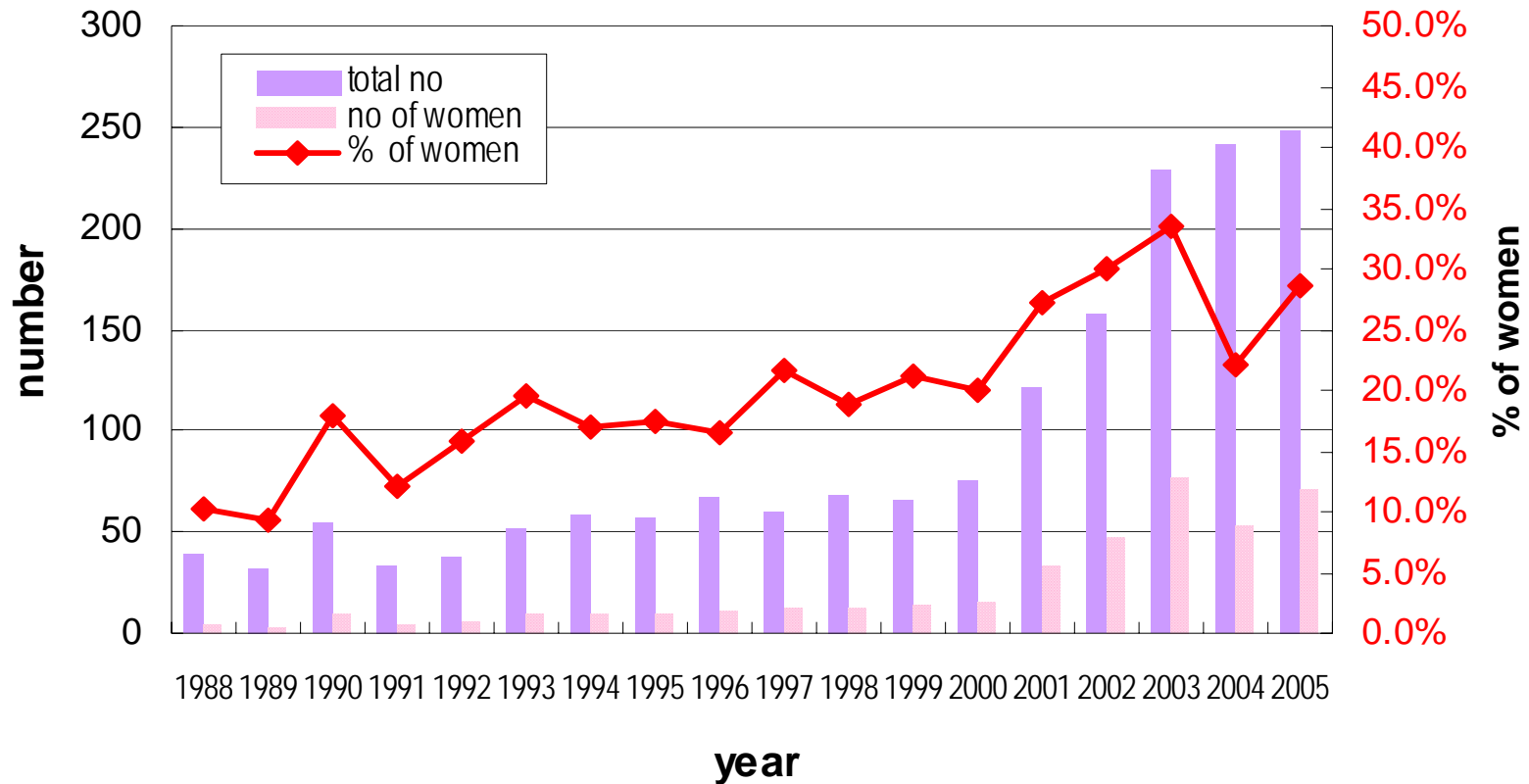


Ratio of Women Awarded Major NNSFC Grants Ranked by Age

Age	2001		2002		2003		2004		2005		2006		2007	
	Total No	% Fem	Total No	% Fem	Total No	% Fem	Total No	% Fem	Total No	% Fem	Total No	% Fem	Total No	% Fem
26--30	1	0	2	0	0	0	1	0	0	0	0	0	0	0
31--35	5	0	11	0	7	0	12	1	2	0	2	0	2	0
36--40	37	3	47	1	70	3	55	3	5	0	7	2	9	0
41--45	29	0	25	0	32	0	58	2	12	0	9	1	17	0
46--50	0	0	6	1	8	1	16	2	2	0	3	0	4	0
51--55	5	0	0	0	2	0	2	0	0	0	1	0	1	0
56--60	7	0	10	1	12	1	9	0	3	0	0	0	1	0
61--65	12	2	16	3	15	0	12	0	2	1	4	0	1	0
66--70	4	0	4	0	5	0	9	0	0	0	2	0	2	0
>70	0	0	2	0	3	0	3	0	0	0	2	0	0	0
	100	5	123	4.88	154	3.25	177	4.52	26	3.85	30	10	37	0

Graduate student enrollment in Institute of Physics, CAS (1988-2005)

Institute of Physics Graduate Students



Reasons why female graduate students are increasing

Right reasons ??

- Women realize they have better chances?
- Women score higher in exams?

Wrong reasons ??

- Harder for women to find jobs
- Men score lower in exams

Disturbing Factors

- Changing policies
- Job discrimination
- Age discrimination
 - Young Investigators' Grants
 - Retirement age
- Child care facilities reduced

CPS Working Group on Women in Physics 2002–7

- Special March issue of *Physics* magazine each year with articles on women in physics
- Round table meeting to discuss women issues at Annual CPS meeting
- Special girl's prize in certain provincial Physics Olympiads
- 2005 World Year of Physics — reaching out
- Xie Xi-De Physics Prize for Women established
-



Physics Enlightens the World

2005 April 19, 17:00 to 21:00 Light Chain across China

100,000 students in 34 cities, with 50% girls, took part in all kinds of related activities





推动人类文明与进步的物理学

— 2005 世界物理年

人物篇 杰出的物理学家

中国杰出女物理学家



Ru-Song Zhou

Hong Jing

Ming-Zhen Wang

Lan-Ying Lin

Cheng-Shu Wang

Lin Li

Xi-De Xie

Ze-Hui He

王明贞 (1906—)
理论物理学家, 物理教育家

周如松 (1912—2005)
全美物理学家, 物理教育家

洪晶 (1917—)
物理学家, 物理教育家

林兰英 (1918—2003)
半导体材料物理学家
中国科学院院士

谢希德 (1921—2000)
固体物理学家, 物理教育家
中国科学院院士
第三世界科学院院士

王承书 (1912—1994)
理论物理学家
中国科学院院士

李林 (1923—2002)
材料物理学家
中国科学院院士

何泽慧 (1914—)
核物理学家, 与钱三强合作, 发现核裂变的三分裂和四分裂现象。历任北平研究院原子学研究所, 中国科学院近代物理研究所, 原子能研究所, 高能物理研究所研究员。中国科学院院士。

中国女物理学家们1970年代合影

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主办单位: 中国物理学会

www.cps-net.org.cn cps@aphy.iphy.ac.cn

2005 WYP Poster #27 honoring Women in Physics in China

Role Models and Award Winners

- **“March 8 Red Banner Bearers”**
- **Biennial nomination of CAS Outstanding Women Scientists started in 2003**
 - **2005 10 selected, of which 2 in physics, 2 applied physics**
- **2003 I’Oréal-UNESCO Prize**
- **2004-5 Ye Qi-Sun Prize**

Physics Awards Won by Women

2003 I'Oréal-UNESCO Prize **Fang-Hua LI**

for her development of a new method to solve the inverse problem in high-resolution electron microscopy which eliminated the lens aberration distortion in the observation of crystalline structures



(1932-)

2004-5 Ye Qi-Sun Prize **Hua-Chen HU**

for solving the 70-year old extinction problem in diffractometry through the general solution of Darwin's transfer equation



(1933 -)

Xie Xi-De Prize for Women in Physics

- One woman to be awarded every two years beginning in 2007
- Those eligible for the prize (tentative):
 - A physicist with many years of exceptional contribution to physics
 - An educator with many years of prominent contribution to physics education
 - One who has played an active role in promoting international collaboration in physics and physics education
 - One who has achieved notable success in a particular field of physics and has promising potential

1st Xie Xi-De (1921-2000) Prize for Women in Physics awarded

2007 Recipients:



Xie Chang-de

(Shanxi Univ, Prof of quantum optics)



Ye Ling

(Fudan Univ, Prof of condensed matter physics theory)

Summary

- The ratio of senior female physicists is slowly decreasing
- The ratio of female graduate students has increased in recent years, but they are also facing increasing employment discrimination
- Chinese women physicists have made great contributions but more effort is required to help them reach the top

Future Tasks

- **Increase awareness of problem at all levels**
- **Increase popularization of physics**
- **Implement Equity, not just equality**
 - **Special grants for women**
 - **Retirement age**



Physicists of the future!

