BESII+BESIII

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☞ Achievements and difficulties

- BESII performance and J/ψ data taking (Dr. T. Hu, X.Y. Shen)
- Software, computing system (Dr. C.C. Zhang, Z.P. Mao)
- Physics analysis and publications (Dr. X.C. Lou)
- Team

☞ Futures

- Data taking with BESII
- BESIII
- Collaboration

☞ Summary

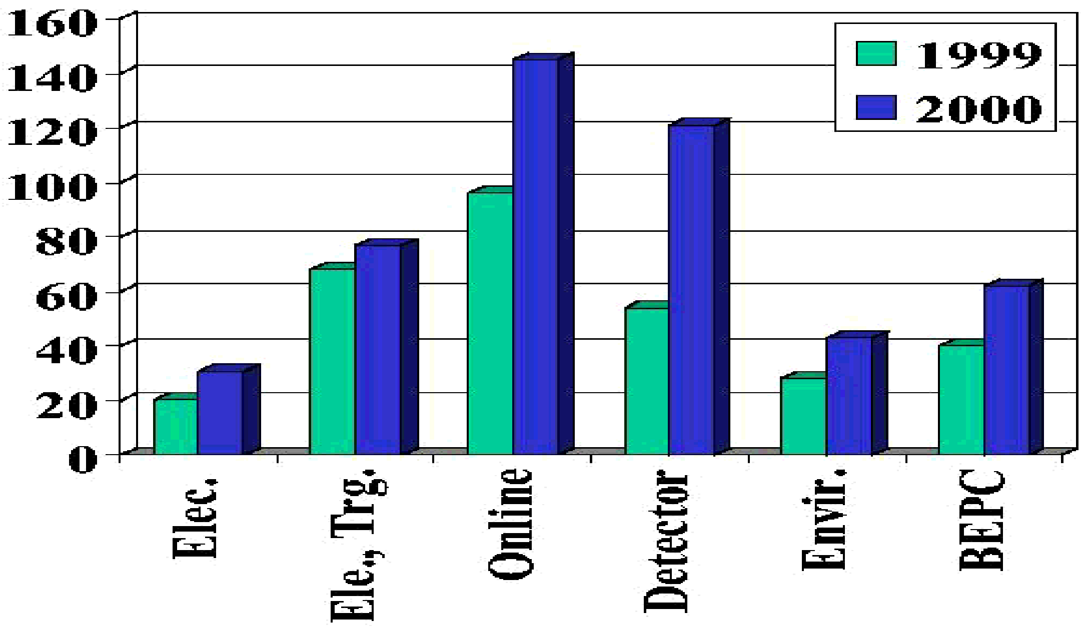
☞ Achievements

- BESII performance and J/ψ data taking
  - No disaster occurred during 6 months running
  - Performance stable
  - 22 M J/ψ events with good quality was collected and reconstructed

BESII Subsystem Status

System	VC	MDC	BSC	BTOF	Moun	DAQ	L.M.	Gas
Status	☺	☹	😐	☺	😐	☹	☹	☺
Problem		3 feedthr.	2 wires broken		Elect.	Trg. elect., aging Online network Software	Poor contact	

Number of Malfunctions



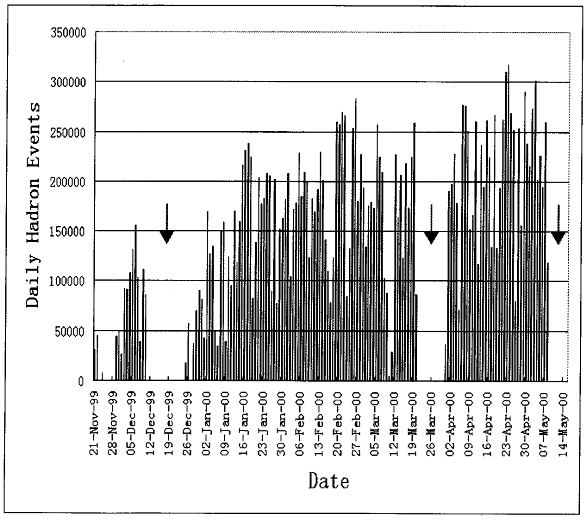
Beam Time Efficiency

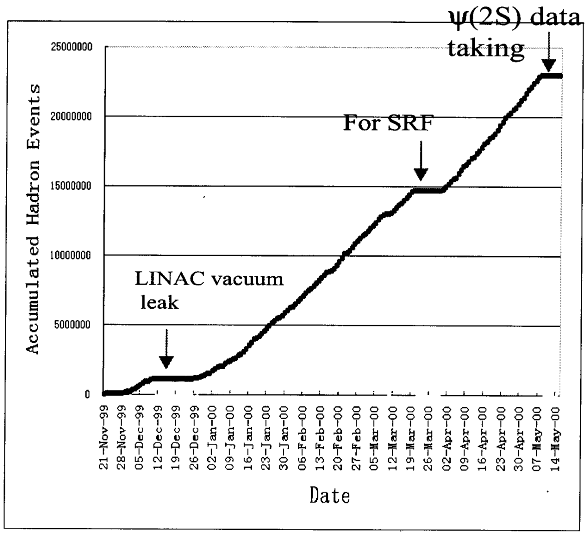
R≡ pure data taking time / total beam time

Year	1999	2000
R(%)	44	53

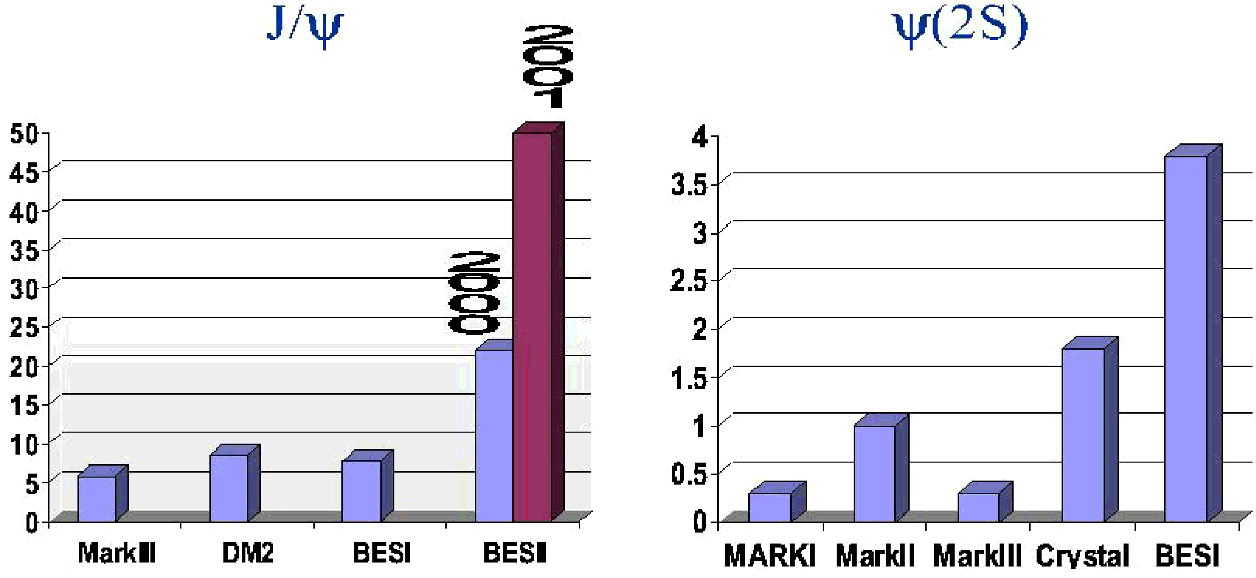
BESII J/ψ Data Taking History

(17/11/1999-15/05/2000)





World J/ψ and ψ(2S) Samples
(×10⁶)



- Software and computing system

Version 102 frozen, Telesis improved, MDC trk finding and fitting to be improved(Zepu with Bill at SLAC)

a) New HP workstation:
HP9000/J5000
CPU ~60 (dual) SPCint95
2 GB RAM
7 × 18 GB HD
2 tape drivers

b) PC farm
Server: PIII 500 (dual);
256 MB SDRAM;17 GB SCSI HD +
6×36 GB Raid (Mode 5)
+
5 PIII500 PC's with 64 MB SDRAM
13 GB HD each
Will serve for the future data analysis and data reconstruction

• Physics analysis and publications (Dr. X. C. Lou)

1) R scan

First scan with 6 energy points:

PRL 84(2000)594

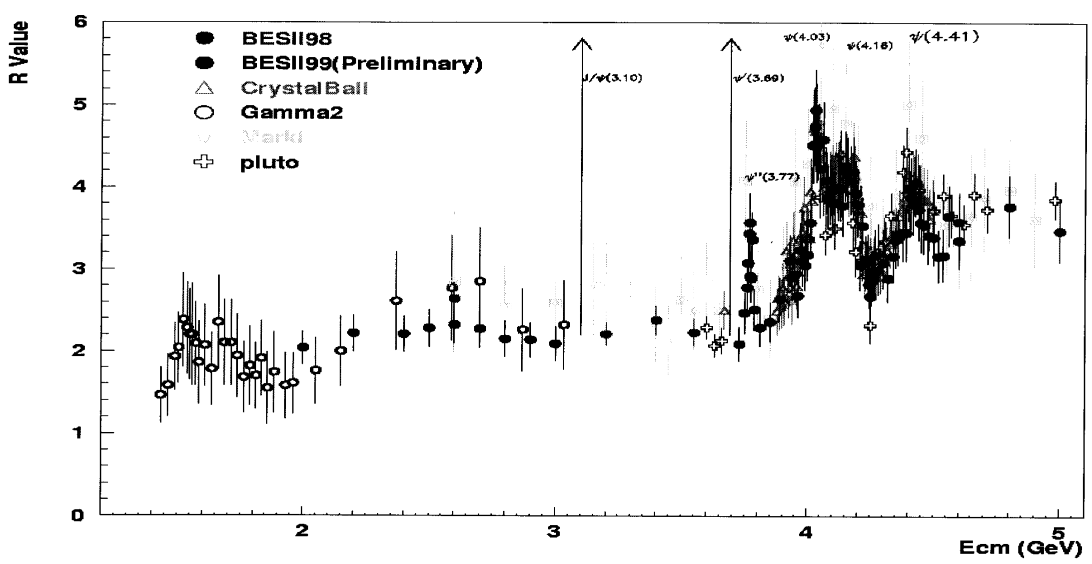
Second scan with 85 energy points:
Preliminary R values at 8 pts reported at LP99 and Hadron99;
All 85 pts will be presented at BES2K, and then summer int. conf. (e.g. ICHEP2K)

Final paper to be submitted in autumn or winter

Hadronic event shape analysis will then follow

E.M. form factor measurement Memo?

R Values in 2-5 GeV



2) J/ψ physics (BESI data)

a) Light hadron spectroscopy and glueball searches with PWA

$J/\psi \to \gamma\eta\pi^+\pi^-$	PLB 446(1999)356
$\gamma\pi^+\pi^-\ \pi^+\pi^-$	PLB 472(2000)207
$\gamma K^+K^-\ \pi^+\pi^-$	PLB 446(2000)200
$\gamma K^\pm K_S^-\ \pi^\mp$	PLB 476(2000)25
$\gamma\eta_c$ ($M\eta_c$ and $\Gamma\eta_c$)	Submitted to PRD
$\hookrightarrow \pi^+\pi^-\pi^+\pi^-$, $\pi^+\pi^-K^+K^-$	
$K^+K^-\pi^0$, $\phi\phi$, $K^\pm K_S^-\ \pi^\mp$	
$\gamma\ \pi^+\pi^-$	Memo
ppbar η	Memo
$\gamma\ \gamma V$ ($V=\varphi$, ρ)	Memo (No PWA used)

b) New physics searches (preliminary)

$J/\psi \to e\mu$, DX	Waiting for memo

3) ψ(2S) physics

$\psi(2S) \to AP = b_1\pi$, K_1Kbar	PRL 83(1999)1918
$\gamma\chi_c$	PRD 60(1999)
$\hookrightarrow$ hadron	
$J/\psi + \pi^+\pi^-$ (soft)	Accepted by PRD
ω/ϕ X	Passed BES referees
$\tau^+\tau^-$	Draft
5 γ's	Draft
$\pi^0 h_c$	
$\hookrightarrow J/\psi + \pi^+\pi^-$	Memo
J/ψ + neutral	1 Memo, two more analysis
Resonance parameters	In progress
Total # of $N_{\psi(2s)}$	1 memo, one more analysis

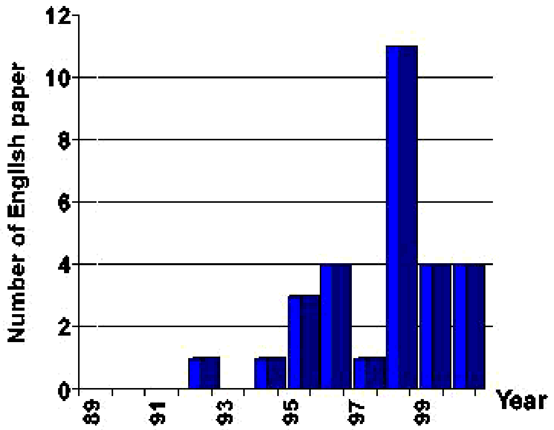
4) D and Ds

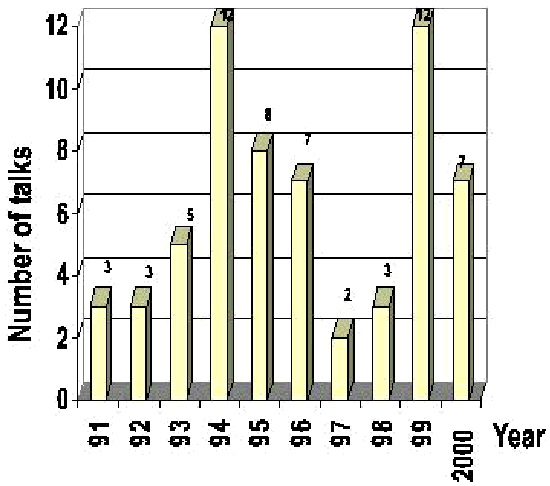
	$D^0 \rightarrow K^{0bar}\pi^+\pi^-, K^{0bar}K^+K^-$	BES referee review
Br:	$D_s \rightarrow K^{0*}X$	Waiting for memo
M_{Ds}:	$D_s \rightarrow \phi\pi, K^*K, K_sK, K_0K\pi\pi$	Waiting for memo

5) BESII

Upgrade of BES: submitted to NIM

BES Publications and Conf. Talks





Conf. Talks given by BES

• Team

a) BES is continue losing young talents due to the killing of BTCF and too low income

b) Some young physicists are growing up

c) Urgent to train hardware experts, BESIII is an good opportunity

☞ Futures

• What data should we take with BESII after 50 M J/ψ?

1) E_{cm}= 3.77 GeV (1 year, ~40 pb^{-1})
2) More $\psi(2S)$ (2 years, 18-20 M)
3) Large sample(10K) at the continuum e.g. 3.55 GeV (~14 days)
4) $\psi(3770)$ resonance parameters measurement (~ 7 days)

Do you have any proposals?

BESIII

- Status of BESII
- What are BEPCII and BESIII
- Principal Tasks for BESIII

Current Status of BESII

- 20 year's old technologies, not good enough PID, poor for γ's, small acceptance
- Doing good and important physics is limited
- Seriously suffering aging problem
- Unable to match BEPCII