Review and Prospect
(BES 98)

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Content

- **Detector of BESII:**

  MDCII with split HV
  Data taking in 98
  Performance of BESII
  Noise of MDCII
  Background of VC and LUM

- **Physics analysis:**

  Topics of physics
  New results in last year
  Status of publication

- **BESII in the future**

<u>BESII in the future</u>

1. Improvement of the detector
   - Events selection of online system
   - Using ESC to monitor luminosity
   - Adjustment of the ESC threshold
   - Air condition and cooling system
   - Noise and background
2. Physics

- R value measurments at 2-5GeV
- J/ψ physics with BESII data
- D physics with BESII data
- τ physics with BESII data
- J/ψ, $\psi(2s)$, D, D_s physics based on BESI data

3. Schedule

   - 1998 R value Scan 2 – 5 GeV
   - 1999 J/ψ Run 20 M
   - 2000 ψ'' Run 30 pb^{-1}

4. Discussion

   - How about ψ' run and D_s run or scan
   - Schedule of MDCIII
   - Improvment of BEPC and BES

Feasibility study of split HV on MDCII

1. Noise in different HV on MDCII
2. Leakage current .vs. time at 2KV
3. Cosmic ray testing with split HV
4. Leakage current .vs. temprature
5. Output of MDCII with split HV
6. Ageing study of feedthrough at 2KV
7. Simulation of electric field of MDC
8. Capacity testing
9. Conclusion

   - Good way to solve the problem
   - Noise is at a level as low as BESI
   - Capacity is larger than 330pf
   - HV on field wires is $\sim$ 1.8 KV

Progress on the physics analysis

- Published:

$D_s \to eX$
ψ' production at 4.03
$D_s \to \phi X$
$J/\psi \to \Lambda\bar{\Lambda}$

- Accepted:

$D^+ \to \mu\nu$
$J/\psi \to \gamma\pi^0\pi^0$

- Submitted:

$\psi \to \gamma\eta', \gamma\eta$

- Paper draft:

charm σ at 4.03 GeV
$\psi' \to AP$
$\psi' \to VT$
χ_{c_i} decays
$J/\psi \to l^+l^-$
$D \to \phi X$
$J/\psi \to \gamma\pi^+\pi^-\pi^+\pi^-$

- Memo:

$D \to eX$
$D \to K^*X$
$\psi \to \pi\pi J/\psi$
$\psi \to \gamma\eta\pi^+\pi^-$
$\psi \to \gamma K^+K^-\pi^0$

- New results:

1. R value measurement at 3.55GeV
2. Search for $^1P_1$ vector glueball
3. Confirmed isospin violation in $\psi \to VP$
4. $J/\psi \to \gamma\pi^+\pi^-, \omega\pi^+\pi^-$ (Helicity analysis)

- New topics:

1. Production of $\eta(1440)$,$f_0(1500)$ and $f_J(1710)$ in ψ'
2. Lepton flavor violating decay of ψ'
3. $\psi' \to 7\pi, 9\pi$
4. $J/\psi \to \gamma KK, \omega KK, \omega\pi\pi$ (PWA)

- Topics of physics in progress:

D_s	3
D	9
ψ'	10
J/ψ	5
τ and other	2
Total	29