

Minutes of the JADE Meeting

held on 7/3/85

- Agenda:
- 1) New Trigger Box
 - 2) Online system improvements
 - 3) Z-chamber HT system
 - 4) Pre-DPG Talks

1) Hans Krehbiel introduced a new member to the JADE Collaboration: "NUBOX" - the friendly trigger box - with accompanying disco lights in the control room. We are assured that no changes in the timing of fast signals (i.e. ADC gates, TDC & DL8 starts) have been made. New features of NUBOX include:

- (i) a status "production run", i.e. the selection of run stop or beam on (a feature which may be set via computer - no more safety cables to pull out!)
- (ii) high flexibility in combining track triggers with T1 postpone bits.
- (iii) computer enabling of all trigger bits (no more fiddling with switches in the hardware room).

Hopefully these improvements will mean 'no more level 5 hang ups'! Details of the internal control cards were then given, and these, thankfully, will be documented in a forthcoming JADE Note.

2) Howard Mills reported on the many changes he and Jan Olsson have made to the on-line system since the last run period. So here goes..... Error messages are now handled by a new program YPAROT. A major improvement is the addition of the actual trigger settings into the HEAD bank. A new test run (T2 cosmic) is installed which uses NUBOX facilities to enable T2. More histograms from the NORD 50: the trigger bit histogram (which displays only those bits triggered

by events surviving the MIPROC 16 filtering) now displays a subset histogram (dotted line) of bits triggered by "accepted" events. Note that the 5% 'randomly accepted events' - are regarded as "rejected", i.e. their trigger bits appear above the dotted line.

The vertex and z-chambers are validated and monitored. The event length histogram now accepts entries of events up to 15K words (previously the limit was 6K). Long events (i.e. split between records) are expected to constitute approx. 10% of events (compared to 1% before) due to the extra information read from the vertex and z chambers plus the high background conditions. Normally, the decision to reject long events is made after the first record is read. Occasionally however, the data bank being used to base the rejection upon, is not complete within the first record. Since the MIPROC 16 does not filter multiple record events, in such instances as these, the NORD 50 will now re-run the T2ANA program (using all the required information) and then make the decision to reject.

Changes to the event display: vertex chamber now added in r-phi view only. The inner detector display now uses the information from all records in long events.

Lead glass pick up events: still accepted for the time being.

Finally, the new experiment run number will begin with 26 (Howard got bored with 24 and 25 was used for the cosmic z-chamber test run!)

- 3) Susan Cartwright informed us of the z-chamber switching on (hardware room) and off (down command) processes. In case of alarm, shift personnel are reminded to fill in relevant details on the 'z-chamber alarm sheet'. The cause of the alarm is most likely to be a jet chamber fast trip. In such cases, the jet chamber should be powered up before the z-chamber.

4) The following are away to Munich for the DPG Conference:

K. Ambrus, S. Cartwright, G. Dietrich, C. Bowdery, T. Takeshita,
S. Komamiya, K.-H. Hellenbrand, P. Warming, A. Dieckmann,
U. Schneekloth, J. Olsson

Pre-talks (were) (are) (will be) given this week.

Next JADE meeting 14/3/85

Jan Chrin 8/3/85

Alma

MINUTES OF THE JADE MEETING
28/2/85

- Agenda**
- 1) Shutdown status and announcement
 - 2) Search for leptoquarks
 - 3) PRC meeting pretalk

1) Shutdown status.

The cosmic test run for the z-chamber is now underway. Some 10000 events have already been written to the IBM (the result of about 12 hours' running).

As far as PETRA is concerned, the 1 GHz cavities have been removed, a superconducting cavity has been installed, the magnets have been overhauled and major maintenance has been carried out on the orbit monitors. The first beam is due in the late evening of March 7 and PETRA will be ready for regular operation by about March 14. There will then be some tests of the superconducting cavity. Data taking should start on MARCH 18: the expected beam energy is 21.8 GeV.

Rolf Felst announced that a few members of the JADE group now have on-site beepers enabling them to be contacted anywhere on the DESY site. It was unanimously agreed that Krehbiel should have one (the unanimity is due to the fact that Krehbiel was not present). Howard Mills refused to consider one (they do not operate in gliders).

Howard Mills mentioned a few problems in the counting house. There have been complaints from R1 about the condition of the old tapes we were using to write data in the event of IBM problems. Therefore we have obtained 30 brand new tapes for data taking. These tapes are labelled JDAS01-30: 01-10 are presently in the counting room. However, though the tapes are now OK, the tape unit is not! It has malfunctioned repeatedly in the last few days. In case of need, our nearest approach to an expert is Herr Masbender—if he is not available, Herr Hase may be willing to help.

The Gould plotter is also giving trouble, producing only pale grey copies. We have obtained some new paper (it has a finite life, and the last batch was very old) and the R2 expert has agreed to give it an overhaul when he has time.

2) Search for leptoquarks.

Michael Kuhlen reported on a search for leptoquarks which he and Sachio Komamiya have recently completed. Leptoquarks are coloured fractionally-charged bosons which couple leptons and quarks. "Light" leptoquarks provide a possible explanation for the notorious CELLO event, 2 similar events from UA1 and possibly the UA1 monojets. Michael and Sachio looked at acollinear jets plus missing energy, jet+muon+missing energy and CELLO-type events. One candidate (in the last category) was found. This essentially excludes leptoquarks in the mass range of approximately 5-20 GeV. Unfortunately this is not quite enough to include the CELLO event!

3) PRC meeting pretalk.

Sachio Komamiya gave a rehearsal of his talk to the PRC meeting on March 5. This covered a wide range of recent JADE analyses. The time limit of 40 minutes was adhered to by talking quickly!

Next JADE-meeting 7/3/85

S. Cartwright 1/3/85

MINUTES OF THE JADE MEETING
21/2/85

- Agenda
- 1) Shutdown status
 - 2) Inclusive muons in the high energy data
 - 3) Flash ADC readout for the jet chamber

1) Shutdown status.

Rolf Felst reported that the magnet transformer is now fully assembled and cabled up and is presently being tested. Assuming all goes well there is nothing preventing the start of cosmic running on Monday. However, Richard Hedgecock explained that the z-chamber could not begin taking data until Wednesday at the earliest, because the gas mixture was only changed to argon-ethane on Thursday morning and a week's flushing is required before the HT can be safely switched on.

Addendum: Richard Hedgecock reports that according to the Brentford engineer the magnet power supply is presently restricted to 6500 A. This is because the coils have one turn fewer than the previous coils, because the correct formers were not available. The problem will be fixed in a few months.

2) Inclusive muons in the high energy data.

Jan Chrin reported on an analysis of the inclusive muon data at beam energies from 39.5 to 46.78 GeV. From 3022 multihadronic events with operational muon chambers, a total of 182 inclusive muon events survived software selection and hand scanning. This compares with 299, 199 and 175 for $udscbt$, $udscbb'$, and $udscb$ respectively (a b' is an additional charge $\frac{1}{3}$ quark). Limits of 22 and 23.05 GeV are set for the mass of b' and t , respectively (neglecting threshold effects), from the one event which survives muon p_T and jet mass cuts.

3) Flash ADC readout for the jet chamber.

Professor Heintze gave a review of the intended installation of flash ADCs as readout for the JADE jet-chamber. The schedule presently foreseen is that production of the necessary electronics would start this spring, with the first tests in the autumn, and installation of the system in the Christmas 1985-86 shutdown. The flash ADCs have been modified to give a greater dynamic range in order to handle the large drift times in JADE. This works well in tests, and it is calculated that the system would improve the double track resolution from 7 to 2.5 mm and the $r\phi$ resolution from 150 to 100 μm . The z resolution is also expected to improve, but this has not been quantified.

Following this, Herr von Walter gave a detailed description of the DL300 modules which would replace the DL8s. These are in essence improved versions of the DL101 used in the vertex chamber readout. Herr von der Schmidt then explained how the built-in microprocessors in the DL300s would be used to convert the flash ADC data into DL8 format to minimise the modifications to existing programs. These introduce some additional deadtime but the amount will depend on how fast the algorithm for obtaining the drift time from the pulse shape can be made. The worst case—fitting to a reference pulse—takes 300 μs , but von der Schmidt is confident that an equally good method (calculating a weighted centre of gravity of the pulse) will be considerably faster. The microprocessors will also handle some of the monitoring and histogramming for the flash ADCs, since this information is not passed to the Nord. One problem

is that the Fortran-77 compiler used is very large and will not run on the Nord or even on the IBM—access to a VAX is required for offline program development.

Finally, Howard Mills looked at the same issue from the point of view of the Nord. The decision to stick to mock DL8 format (even to the inclusion of crate markers every 56 channels, although the flash ADC crates are actually 48-channel) minimises the impact on the Nord and MIPROC-16 and also on the IBM REFORM job, which is important since all the experts on this convoluted program have long since departed and its status is that of a very murky black box. The remaining changes involve the readout task, which will be handled by Jan Olsson, and modifications to various routines caused by the fact that to allow for the greater precision of flash ADCs the drift time will be longer (i.e. consist of more bits). Anybody who is willing to investigate whether this entails changing the REFORM job is encouraged to volunteer; the Nord changes, plus the interfacing required to communicate the DL300 monitoring and histograms to the Nord for display, will be dealt with by Howard.

Next JADE-meeting 28/2/85

S. Cartwright 24/2/85

Alisa

MINUTES OF THE JADE MEETING
14/2/85

- Agenda
- 1) Shutdown status
 - 2) JADE talk for PRC meeting
 - 3) Direct photons and inclusive η
 - 4) AOB

1) Shutdown status.

Henning Kado reported that the vertex chamber is now fully installed. Wulf Bartel said that one endplug is still 10mm from its fully closed position due to problems with the mounting gear. If necessary it is possible to close the recalcitrant plug using screws but he would prefer to wait until the mounting gear can be properly repaired.

The magnet power supply is now repaired but the DESY people say that it cannot be connected up because moving the cables in this cold weather risks cracking the insulation. It was generally felt that waiting for spring was an unsatisfactory solution to this problem and it was suggested that a temporary heated tent could be erected over the relevant cables. R. Felst said that he would push for something to be done as soon as possible.

Concerning PETRA, R. Felst reported that the super-conducting cavities have been installed. The first beam is due on March 8; it is not known how soon after that data-taking will commence.

2) JADE talk for PRC meeting.

Sachio Komamiya is our representative for the PRC meeting on March 5. Young people were requested by the committee—this has resulted in such youthful nominees from other experiments as Min Chen, Dave Binnie and Elliot Bloom.

Sachio presented a provisional table of contents for his 40-minute talk. In the unlikely event that his comprehensive list omitted your exciting analysis, you are invited to communicate your results to Sachio for inclusion.

3) Direct photons and inclusive η .

Steve Wagner reported on two analyses which are expected to form part of the inclusive photon long paper, the second draft of which should be appearing shortly. The first of these is a search for evidence of final state radiation (direct photon production) and the second is an updating of Karlheinz Meier's results on η production.

A direct photon analysis has been recently reported by the MAC collaboration at PEP, using four times our luminosity. Our similar analysis necessarily suffers from lack of statistics. We do see an excess of hard isolated photons compared to the expectation from Berends and Kleiss α^3 initial state radiation with Lund 5.2, and this excess is in excellent agreement with the prediction of B+K α^3 initial+final state radiation. However, Sakue Yamada pointed out that the order α^4 contribution, which was not included, could be large, and this is supported by the surprisingly large number of events in which two hard photons survived the cuts (6 out of 273 events; the excess over expectation is 48). Steve attempted to deduce an value for the asymmetry expected due to the interference of initial and final state diagrams: the result obtained was not statistically different from zero. The method used in the MAC analysis (where a statistically significant result was obtained) is not clearly explained in the paper—it was agreed that Steve should consult a

member of the MAC collaboration who happens to be at DESY, in the hope of clarifying the situation.

The η analysis was intended to be a simple extension of Karlheinz's published study. However, some difficulties have been encountered. The η signal is not as clear in the new data, and the much higher Monte Carlo statistics now available indicate that the acceptance was wrongly calculated for one energy bin in the old analysis. As a result, the slight differences previously observed between η and (e.g.) pion production are no longer apparent. It was agreed that Steve should look at the π^0 signal in the new data to see if the weakening of the η signal could be due to a calibration shift. This would not affect the difference in acceptance.

4) AOB.

For those going to the DPG meeting, it was announced that DESY is organising transport for the DESY personnel going. Non-DESY people could presumably be included and should contact the travel office. It is not clear that this is cheaper than a Rosarote ticket!

Hanns Krehbiel said that persons unknown had used a TOF light guide as a cable anchor point, thus rubbing off the black tape. Please do not do this again. Offending cable ties will be cut as soon as Herr Krehbiel lays eyes on them and he will not be held responsible for any consequent damage to the cable!

Next JADE-meeting 21/2/85

S. Cartwright 15/2/85

Olsson

Minutes of the JADE Meeting
held on 31.1.1985

- Agenda:
- 1) Shutdown Latest
 - 2) Physics Results: $e^+e^- \rightarrow e^+e^- \eta(548)$
 - 3) Miscellaneous | $\rightarrow \gamma\gamma$

1) H. Kado reported that the beam pipe vacuum leak was of no real surprise considering the matching of the straight section to the conical end (which is from where the leak came) was done in a manner regarded as 'criminal' for vacuum technology. These particular sections have now been properly re-joined and the beam pipe is to return to its rightful place on the 1/2/85.

We are also reminded that as from 4 p.m. of that date, argon-ethane will be put into circulation (until 11/2/85) allowing tests on the z-chamber and muon chambers to be made thorough the following week. Hence don't even think about smoking in the hall!

2) Jan Olsson presented a detailed account of his work on the measurement of the eta width. Bugs in the Monte Carlo programs were found and removed, the details of the analysis procedure were slightly changed from those given in the first draft of the paper, and a thorough investigation into possible systematic effects was made - such that our result now finally stands at $\Gamma_\eta = 0.51 \pm 0.04 \pm 0.04$ KeV.

Only two other experiments have produced a measurement of the eta width and our result, being the most precise, has important implications. We are therefore encouraged to read (and comment upon) the forthcoming second draft. The paper will be dedicated to our late friend, Bice Sechi-Zorn, who performed the earlier analysis, the results of which constituted the original draft.

3) K. Kawagoe informed us that the complete set of bhabha events are on the following files:

F22TAK.DISK.BRLLUMI(ENDLUMI).G001519
.G520733
.G734956 (1984)

By hook or by crook, the barrel and end cap luminosities agree to 1%.

It was pointed out that the visible energy spectrum of the 44 GeV RAL Monte Carlo events does not agree with data. (This may also be the case for the 34 GeV RAL events). Monte Carlo users should be aware of this discrepancy before formulating any physics conclusions. Investigations into the cause and/or remedy will be made.

JADE Note 121 which serves as a first draft of the four lepton final state paper has now been distributed. Comments to T. Takeshita are welcomed up until 15/2/85.

Next JADE Meeting - 7/2/85 (provisional)

Jan Chrin 31/1/85.

Olsson

Minutes of the JADE Meeting - held 24/1/85

- Agenda: 1) Shutdown latest - Beam pipe vacuum leak
2) Muon gas system
3) Other matters

- 1) On restoring the magnet to its rightful position with the beam pipe in line with the PETRA ring, a vacuum leak from within the beam pipe was discovered. The offending parts are now being rewelded in the workshop. Consequently the shutdown note quoted in the last 'JADE Minutes' is already out of date.
- 2) Rolf Felst informed us that the B2 group have had to withdraw their service of monitoring the muon gas system because of commitments to HERA. (This has been on the cards for some time now.) Consequently the JADE shift crew will be required to record various readings from the gas house. Arrangements regarding monitoring the gas system during "no data taking periods" will also have to be made.
- 3a) Sachio Komamiya has been elected to present JADE's recent results at the PRC meeting on March 5th.
- b) Attention Howard Mills, Hans Krehbiel and Jan Olsson. It has been requested that at the JADE meeting of 21/2/85 a status report on "Possible New Readout for the Inner Detector based on Flash ADC's" be given.
- c) Luth Becker informed us that a new batch of REDUC1 tapes have arrived from RAL.
- d) Some 70 000 plus MC events generated at RAL are now available at DESY. For details see F22CHR.INFO(MCMHRAL) - multihadronic events, F22CHR.INFO(MCMURAL) - muon-inclusive MH events.
- e) Finally, P. Söding on return from a recent conference informs that UA1 and UA2, having analysed half of their new data, are making no statement on top (!).

Next JADE Meeting - 31/1/85

Jan Chrin - 25/1/85

Olson

MINUTES OF THE JADE MEETING
10/1/85

- Agenda**
- 1) 1985
 - 2) Shutdown status (machine)
 - 3) Shutdown status (JADE)
 - 4) AOB

1) 1985.

Rolf Felst wished all those present a Happy New Year for 1985.

2) Shutdown status (machine).

Rolf Felst reported that the PETRA shutdown is progressing according to schedule. The tunnel will be closed on March 5. Data-taking will start around mid March and there will be a short shutdown at Easter (April 5-8).

3) Shutdown status (JADE).

Wulf Bartel presented the schedule for remaining shutdown work on JADE. This is as follows:

Beam pipe in, close vacuum	Jan 14-18
Vertex chamber cabling	Jan 21-22
Water hose replacement	Jan 22-Feb 8
Tests without magnetic field	Jan 23-Feb 15
Close end plugs	Feb 12-15
Concrete shielding	Feb 18-22

Richard Hedgecock reported on the condition of the JADE magnet power supply. The delay in its repair was due to DESY's being late in sending confirmation of the order, which resulted in another job being scheduled ahead of ours. It is now expected that the power supply will be shipped sometime in the week Feb 4-8.

Henning Kado reported on the work done on the vertex-chamber. The dead pre-amp has been replaced; the big gas leak turned out to be in the gas system rather than the chamber itself and has now apparently been fixed. The main cause of oxygen contamination in the chamber seems to be diffusion through the walls—a faster gas flow is being considered as a way of reducing the level of contamination. On the software side, the calibration of the pre-Christmas running has been hindered by corrupt data caused by a bug in the flash-ADC electronics; the first calibration for post-Christmas data is expected to be done relatively quickly. A new computer network has been born—J-NET connects the Nords and the vertex-chamber IBM PC. File transfer between the Nords should now be possible without physical floppy-disc transfer.

Richard Hedgecock gave details of the hoped-for z-chamber cosmic test running. This will occur as soon as possible (probably after Feb 24 or so, depending on when the magnet is ready) for as long as possible (1-3 weeks). The idea is to accumulate cosmic data for calibration of the new HT configuration of the z-chamber (if time allows, several configurations will be tested).

In order to make a check on the new z-chamber HT cabling while it is still accessible in case of problems, it will be necessary to have argon-ethane in the muon chamber gas system during the period 1-10 Feb. This also coincides with a visit by Keith Stephens. However it was

felt that leaving argon-ethane in while work was done on the end-caps was unsafe in view of the known gas leak in the z-chamber. Thus the likely schedule is to have argon-ethane in from Feb 1-10, pure argon from the tenth till about the twentieth, and argon-ethane thereafter.

It was announced to general apprehension that Krehbiel has installed a totally new trigger box. There will also be six new disco lights in the control room.

4) AOB.

Rolf Felst informed us that there will be a joint PRC/Scientific Council meeting on March 5. Talks in the open presentation will be arranged by topic rather than by experiment: which experiment will provide a speaker for which topic has yet to be decided. Anyone who has strong views on which topic JADE should bid for, or who would like to volunteer as the JADE speaker, should contact Rolf Felst.

Next JADE-meeting 24/1/85

S. Cartwright 11/1/85

Olsson

Minutes of the JADE Meeting
held on 20/12/84

- Agenda: 1) Latest News
 2) Physics Results

- 1) The generation 8 TP programming has come to a close and a summary of the available multihadronic data sets can be found on 'JADE PR. TEXT(TPMSS)'.

The NORD computers in the counting house will be stopped and the disks removed over Christmas, unless Jan Olsson can be convinced that they are required for "serious tasks".

The two invitations to the "Electroweak Week" in Moriond are still going for grabs! Anyone interested?

- 2) Sachio Komamiya gave a full account of his work on monojet production through virtual Z^0 exchange. His search was motivated by QA1's recent observation of monojet events which many theorists believe to be the result of something new and something SUSY. Sachio's conclusions can be read in JADE Note 118 (released this week) which also acts as a first draft of a paper to be submitted to Physics Letters.

Next JADE - Meeting - 3/1/85

Jan Chrin - 20/12/84

Minutes of the JADE - Meeting - held 6/12/84

- Agenda: 1) News regarding talks, conferences and other matters.
2) MSS MH Data
3) Miscellaneous

1) (i) The Scientific Council has requested an open session on 'Recent Results from DESY' - to be held on 10/12/84. Gus Zorn will be presenting JADE's measurement of the eta width. A rehearsal of his talk will be given this afternoon (7/12/84) at 5 p.m. in Seminar Lab. II.

(ii) JADE has two invitations for the Moriond Conference (10/3/85) on a) QCD, b) Electroweak Theory. Anyone interested?

(iii) If you have a strong desire for a Terminal in your very own office, present your case to Rolf Felst. The Computer Users Committee wants to know how many terminals they should buy over the next two years.

2) Chris Bowdery informed us that the following generation 8 TPed MH data sets will shortly be appearing on MSS:

F22ELS.REDUMERG.TPGEN8.Y1983.MSSPART5
" " " .Y1984.MSSPART1
" " " " .MSSPART2
" " " " .MSSPART3
" " " " .MSSPART4

The contents of the old 1982 and 1983 MSS MH data sets will be replaced by the new generation 8 events, while some of the updated 1981 data sets may have to be transferred to tape due to lack of MSS space.

3) "JADE CHRISTMAS PARTY TONITE" (8:00 p.m.)!
Don't forget your 10 DM though!

Next JADE Meeting - 20/12/84

Jan Chrin - 7/12/84.

- Agenda: 1) German Physical Society (DPG) Conference
2) Physics Results: $e^+e^- \rightarrow \tau^+\tau^-\gamma$
3) The Life and Times of the b quark over the Atlantic
4) Miscellaneous

1) Rolf Felst reminded us of the DPG Conference to be held in Munich in March of next year. Those still wishing to present their work at the conference should inform Rolf Felst before 1st December. The following presentations have so far been decided upon:

- Ambrus K. - Search for Unusual Ionizing Particles
- Bethke S. - Fragmentation of Heavy Quarks
- Bowdery C. - FCNC
- Cartwright S. (on behalf of R. Marshall) - b asymmetry (muons)
- Dieckmann A. - Measurements of α_s
- Dietrich G. - Lambda signal (that's 2 1/2 minutes per lambda)
- Hellenbrand K.H. b asymmetry (electrons)
- Komamiya S. - SUSY
- Schneekloth U. - Tau Analysis
- Takehita T. (on behalf of Tokyo) - $\mu\mu\gamma$
- Wagner S. - F Mesons

2) Uwe Schneekloth presented further results on his Tau analysis. A charge asymmetry in the process $e^+e^- \rightarrow \tau^+\tau^-\gamma$ was observed and measured to be A (expt.) = $-(20.4 \pm 9.9)\%$. This is to be compared with the following predictions:

$$A(\text{QED}) = -(35.0 \pm 4.9)\%$$

$$A(\text{QED} + \text{weak}) = -(39.8 \pm 5.3)\%$$

3) Steve Wagner reported on the Santa Fe Conference held earlier this month. A result which emerged from the conference of particular interest to JADE, was the measurement of the b-lifetime by the Mark II group. Their b's live for:

By the "delta" method, $\langle T_B \rangle = 0.85 \pm 0.17$ psec.

" " "Flight Path" method, $\langle T_B \rangle = 1.23_{-0.19}^{+0.26} \pm 0.5$ psec.

4) Susan Cartwright informed us, on behalf of Howard Mills, that all files on the corrupted NORD disc (see JADE note -8/11/84) have been saved. Phew!

Howard Mills and Richard Hedgecock have kindly volunteered to organize the JADE CHRISTMAS PARTY. This will be held on Friday, 7th December. Time and venue yet to be decided.

Next JADE meeting - 6/12/84

Oliver

Minutes of the JADE meeting - 8/11/84

- Agenda:
- 1) PRC
 - 2) $\mu\mu\gamma$ events
 - 3) Search for the "charginos".
 - 4) Miscellaneous

- 1) Wulfrin Bartel reported on the PRC meeting.

PETRA will continue to run at high beam energy until the end of 1985, after which the choice of energy will again be reviewed. The precise energy point has not been finalised. At $E(\text{beam}) = 21.5 \text{ GeV}$, a transmitter failure will not result in a loss of beams. However $E(\text{beam}) = 21.7 \text{ GeV}$ is desirable since the centre of mass energy would then be above "the CELLO event".

Both Crystal Ball and Argus now say that the zeta (8300) peak has disappeared !! The original signal was based on 10 pb^{-1} of data collected during 1983. In 1984 a further 21 pb^{-1} were collected. 13 pb^{-1} of which have so far been analysed. With the increased statistics, the signal just does not seem to be there anymore. In fact, Crystal Ball say the photon spectrum in this region looks completely flat!

The next PRC meeting will be held on March 5th and 6th, will we be hearing of "The return of the zeta"? Perhaps in a shifted position?

- 2) Sakue Yamada reported that CELLO have an enhancement of $\mu\mu\gamma$ events with $m(\mu\gamma) > 30 \text{ GeV}$. CELLO suggested that we may have missed this effect in our analysis through our choice of cuts (see JADE paper). Sakue repeated the analysis using CELLO's cuts but still found no evidence for an excess of events with $m(\mu\gamma)$ above 30 GeV . Further checks were made to ensure that the excess CELLO events did not occur in a region in which by comparison the JADE detector is insensitive to photons (ie the gap between the barrel and end cap parts). The inevitable conclusion was that our data still agrees well with QED, and CELLO must be suffering from statistical fluctuations!
- 3) Sachio Komamiya reported on his latest supersymmetric ploys. This time he gave a full account of his unsuccessful attempt to track down the "charginos".

- 4) Howard Mills sadly reported that the NORD disc has been corrupted. The last back-up disc dates 12/10/84. Those who have made changes to programs on the NORD since then will unfortunately have to do them again!

Those interested in having their work presented at the German Physical Society (DPG) Conference in Munich, should submit their contributions to Rolf Felst before the end of the month.

Finally, JADE meetings will now take place fortnightly during the shutdown period. Should any urgent matters arise however, an emergency meeting will be called.

Jan Chrin 8/11/84

Next JADE - Meeting 22/11/84

MINUTES OF THE JADE MEETING
1/11/84

- Agenda
- 1) Current run
 - 2) Shutdown schedule
 - 3) AOB

1) Current run.

Rolf Feist reported that the magnet water leak which occurred on Sunday was caused by severe corrosion where the affected hose came into contact with an aluminium manifold. Both the hose and the manifold are only six months old, having been replaced in the last shutdown. Nonetheless they will have to be overhauled again in this shutdown. To minimise the chance of another catastrophic leak, the cosmic run scheduled for immediately after PETRA switches off has been postponed till January, by which time the overhaul should have been completed.

The problem was caused by the relatively low resistivity of the hose used, which allowed a current leakage path to be established. Wulf Bartel said that there is a firm which makes high resistance half-inch hose which is used by both CERN and DESY. He will enquire whether larger hose is also available. If it has to be made to special order we will have to buy one kilometer—anyone want 900 m or so of hosepipe?

2) Shutdown schedule.

Wulf Bartel summarized the currently foreseen schedule for shutdown work. The major items are

- (1) removal of the vertex-chamber to try to fix the gas leak;
- (2) repair of some barrel lead-glass damaged in the flood;
- (3) high-voltage tests and recabling work on the z -chamber.

The arches will be moved on Monday (Note: some help may be needed in the hall). Because of the need to do high-voltage tests on the z -chamber, which shares the muon chamber gas system, this will be done *without* switching on to pure argon. *There will be argon-ethane in the muon chamber gas system throughout the first week of the shutdown — NO SMOKING IN THE HALL DURING THIS TIME!*

The conical sections of the beam pipe will be removed with the experiment *in situ*. It is hoped that we will then be able to move the magnet without having to remove the big concrete wall to the left of the detector. The magnet should be moved by the end of the second week.

At the beginning of December it is foreseen that the top plates will be taken off the magnet to allow repair of the damaged barrel lead glass. (Note: Hanns Krehbiel reminds people not to tread on the TOF-counters!)

3) AOB.

The PRC meeting on future running at PETRA takes place next Wednesday. Götz Heinzelmänn will make the public presentation of JADE's case. His pretalk is scheduled for FRIDAY NOV 2 at 18.00 in Seminarraum 1 L2 (the JADE meeting room). It will last 15-30 minutes. The order of next Wednesday's presentations is alphabetic — first CELLO (Davier), then JADE (Heinzelmänn), Mark J (Böhm), and finally TASSO (Saxon).

Next JADE-meeting 8/11/84

Heinzelmänn pretalk, 2/11/84 18.00 Sem. 1 L2.

PRC meeting 7/11/84

S. Cartwright 1/11/84

Olsson

MINUTES OF THE JADE MEETING
25/10/84

- Agenda
- 1) Current run
 - 2) Variation of first moment of IR safe quantities with s
 - 3) AOB

1) Current run.

Howard Mills discussed the steps he has taken to deal with the "pickup" or "super LG" events. These events, characterised by "lit up" lead glass (and, often, jet chamber and z-chamber), have been occurring for some months, but have recently become very much more common. They cause the "N50 BUSY" message to appear for several seconds, and consequent high dead-time. The offending routine is the LG cluster search. Howard detailed a method for identifying these events at an early stage in the analysis so that the LG analysis is inhibited. A test of this method showed that it rejects almost all events with more than 250 barrel lead glass blocks on. Incidentally, these events now account for approximately 1% of all triggers.

In addition, Howard explained that the plateau sometimes seen in the jet-chamber mean hits/wire plot is also caused by these events. It corresponds to the maximum number of wires which can be fitted into the first record assuming that every wire has eight hits. (The fact that this is approximately equal to the number of wires in the vertex chamber had given rise to some misguided speculation about the cause of the trouble!)

Sakue Yamada added that the "super LG" events have been analysed offline by the Tokyo group. In the past these events were very early, clustered around the opening of the LG timing gate. However, they now occur throughout the allowed time range. The $+z$ side is, on average, worse than $-z$. This grouping corresponds with the HV supply to the LG, but not with the readout (which starts in the middle of one side).

Rolf Felst said that a previous epidemic of pickup events was traced to a sparking component within the detector. Beate Naroska remarked that this was only discovered by chance. It seems that the pickup events also happen during cosmic runs, so PETRA is probably not to blame.

Jan Olsson said that the right-hand side of the hardware room is also suffering from noise (not necessarily connected to the above). This is causing various errors reported from the CAMAC on that side, sometimes even leading to Nord crash. In connection with this, Laurikainen said that if the Nord does crash, the FAMP has to be reloaded—there are instructions on how to do this in the counting room.

2) Variation of first moment of IR safe quantities with s .

Paul Hill gave a status report on his work on the energy dependence of various distributions. This is a similar analysis to that reported by Andreas Dieckmann last week. Paul uses $(1 - T)$, M_H^2/s and $(M_H^2 - M_L^2)/s$, where M_H and M_L are the Clavelli masses, and T is thrust. Data with \sqrt{s} between 12 and 46 GeV are used. The very preliminary result of this study is $0.11 < \alpha_s < 0.19$ at 95% CL. First attempts to parametrize the non-perturbative contribution in terms of $1/\sqrt{s}$ were unsuccessful, probably because the parametrization used was too naïve.

3) AOB.

Siggi Bethke showed the results of his high statistics studies of 4-jet event reconstruction at 34 and 44 GeV, which were not ready in time for last week's discussion. With the same Monte Carlo parameters, the purity of the extracted 4-jet sample rises from 63% at 34 GeV to 90% at 44 GeV. The efficiency (meaningful only in terms of the Monte Carlo parameters used) decreases slightly.

Rolf Felst reported that the 2 weeks' cosmic running scheduled for immediately after PETRA shuts down has been reduced to one week to allow work on the cooling lake to begin on time.

Karl-Heinz Hellenbrand reported a bug in the Heidelberg Monte Carlo. The decay length for K_L^0 in the inner detector is a factor 4 too short. Only events generated in Heidelberg are affected.

Next JADE-meeting 1/11/84

S. Cartwright 25/10/84