

Olson

MINUTES OF THE JADE MEETING
18/10/84

- Agenda
- 1) Status of vertex chamber
 - 2) Choice of energy for 1985-6
 - 3) AOB

1) Status of vertex chamber.

Henning Kado updated the vertex chamber status as reported last week. The ratio of new problems to solved problems has now dropped below 1, an encouraging development. Contrary to last week's expectations, the level 9 Nord hangups have been fixed but the branch 3 micro-processor incompatibility remains unsolved. However the latter problem has been bypassed by reading out the vertex chamber crate first, before the tagging system. The only disadvantage of this solution is that in long events the muon information now ends up in the second record, where it is inaccessible for the Nord-50 analysis. Several new problems have shown up, but all are minor and will probably be solved quickly.

The HV rundown time has been reduced to 90 sec., an acceptable delay. Also, the first version of the REFORM job for the vertex chamber is running and will be tested over the next few days. Thus all is now ready to include the vertex chamber in the standard readout. The operating instructions are simple—just switch it on! If there is an alarm, wait till voltage goes fully down, then reset. There is only one reset button (in the rucksack), which will be clearly marked. At present there are three hard trip conditions (jet chamber hard trip, anode current per quadrant, total anode current) and one soft trip (power supply problems). The soft trip must also be reset in the rucksack, unlike jet chamber soft trips. Vertex chamber alarms cause the green disco light to flash.

Note that the new readout treats the vertex chamber like the jet chamber—if it is not on, the run is vetoed (no triggers).

2) Choice of energy for 1985-6.

Wulf Bartel chaired a discussion on the physics arguments for low or high beam energy in 1985-6. The official parameters are

18 GeV	50pb ⁻¹ /yr	15000 events/yr
22 GeV	20pb ⁻¹ /yr	4000 events/yr

For comparison, our present data sample is

7 GeV	3000events
11 GeV	2400events
17 GeV	24000events
22 GeV	~4000events

The physics topics considered were:

- (1) α_s , particle flow, energy flow, energy-energy correlations.
Wulfrin reported that Alfred Petersen considers that he has no need of more statistics at 18 GeV, being limited at present by systematic errors. He would therefore prefer 22 GeV.
- (2) The 4-jet analysis.
Siggi Bethke presented preliminary evidence on this topic. The present situation is that all

experiments see about twice as many 4-jet events as predicted by Monte Carlo. This may be because the Monte Carlo uses the wrong Q^2 scale for the second gluon emission. Based on low statistics studies, it seems that the 4-jet sample would be considerably purer at the higher energy. However, the statistics of this relatively pure sample would be small, and it is not clear whether a better analysis would be possible with the expected number of events.

(3) α_s determination using means of distributions.

Andreas Dieckmann presented first results from his attempt to determine α_s using the method presented by Field at the Cornell conference. This method uses mean values of various distributions and appears to be relatively model independent. At present Andreas sets limits of $0.08 < \alpha_s < 0.18$. The limiting factor is Monte Carlo statistics, because of the need to correct the distributions for detector and radiative effects. As means of distributions are used, statistical errors become small relative to systematics for quite small data samples, thus the existing sample of events at 22 GeV beam energy is probably adequate for this analysis. The only advantage of higher statistics is that it enables the MC to be tuned more accurately.

(4) Exclusive studies: η, Λ, D^* .

Here the need is for more statistics. Thus the lower energy is preferred.

(5) Asymmetries.

The increase in the asymmetry with s almost exactly cancels the decrease in statistics, leading to the same statistical significance at either energy, assuming the validity of the standard model. However it is possible that any deviations from the standard model might become more apparent at the higher energy. There is thus a slight preference for 22 GeV. (Note from last week—Robin Marshall's suggestion that some data be taken at beam energies of 7 and 10 GeV was made on the basis that it helps the study of QCD and electroweak effects in R , and has nothing to do with asymmetries.)

(6) Search for new particles.

Sachio Komamiya showed some of the new limits that could be obtained for each of the two scenarios. Clearly, if the threshold for a given particle is above 18 GeV, the additional statistics at that energy are not going to lead to its discovery! Thus, higher energies are unambiguously preferred.

(7) $\gamma\gamma$ physics.

Jan Olsson pointed out that JADE is probably the best detector in the world for some types of two-photon physics, e.g. η and ρ^\pm . Two-photon physics is almost independent of beam energy but requires high luminosity, thus the low energy option would be preferable.

In conclusion, Wulf Bartel reminded us that the PEP experiments have much higher integrated luminosity than we can hope to obtain at PETRA. The suggestion would then be that anything which is better done at lower energies will be better done at PEP. We should therefore prefer the 22 GeV option while recognising that it involves some sacrifice.

3) AOB.

The meeting having already lasted more than two hours, no other points were considered important enough to warrant prolonging it further.

Next JADE-meeting 25/10/84

S. Cartwright 19/10/84

Olsson

MINUTES OF THE JADE MEETING
11/10/84

- Agenda
- 1) Status of vertex chamber
 - 2) Exotic events with muons
 - 3) PRC meeting

1) Status of vertex chamber.

Henning Kado reported on the status of the vertex chamber hardware. One preamplifier (out of 332) is not working, meaning that one wire gives no z -information. There is a major gas leak (15 l/hr in, 1 l/hr out): the gas used (89% Ar, 10% CO₂, 1% CH₄) is non-flammable, so this is not dangerous, but there is a risk of oxygen leaking into the chamber. Apart from these minor problems the hardware works well. One difficulty is that the voltage run-down takes a very long time (5 minutes), leading to aggrieved phone-calls from PKR. This can be circumvented by making an "emergency off" when the voltages have reached a safe level. Instructions on how to do this will be made available when the vertex chamber readout becomes standard practice.

Jan Olsson then reported on the software and CAMAC problems associated with installing the vertex chamber readout. At present the vertex chamber occupies all of branch 1 and one slot in branch 3. Reading out branch 1 does not cause problems, but there seems to be some incompatibility between the 2280 processor for the tagging system (also in branch 3) and the TAC 2160 microprocessor used in the vertex chamber readout, so that the branch 3 crate and the tagging system cannot both be switched on. This problem may be due to the fact that the tagging system has an A1 crate controller while everyone else has A2's. It is expected that the trouble will soon be cured.

More serious are the level 9 Nord hangups associated with the new jet-chamber readout software which is necessary to allow the vertex chamber readout to fit into the available memory on the Nord. The problem may lie in the transfer of variables from the readout subroutine to the main program. Unfortunately this is an assembler routine, thus there are very few people competent to debug it. The trouble occurs in the ring 3 readout and is linked with long events, though not every long event causes a crash.

Wulfrin Bartel said that the IBM software, notably the REFORM and REDUC jobs, is not yet equipped to handle the vertex chamber. The task is more complicated than installing the z -chamber software because the vertex chamber bank may be split in long events. Thus, at present any data taken with the vertex chamber cannot be reformatted. The backlog of unformatted vertex chamber data which will accumulate from now on will be dealt with during the shutdown.

2) Exotic events with muons.

Michael Kühlen reported on a search for unusual multi-hadronic events with muons. The search was carried out by visual scan and involved the 1984 data up to the magnet breakdown. Michael showed one "CELLO-like" event: the relatively low energies of the muons in this event make an explanation in terms of B-decay plausible. There were also three events with an isolated muon associated with neutral energy recoiling from one or two jets. In two cases the quality of the "muon" is doubtful—one has a missing hit in the last layer, the other appears to come from a decay in the jet-chamber. The third has a good muon and is a low multiplicity planar event.

3) The PRC meeting revisited.

Yet another update on the November 7 PRC meeting to decide next year's PETRA energy. The figures now being quoted are

18 GeV	50 pb ⁻¹ /yr	(TASSO)
22 GeV	20 pb ⁻¹ /yr	(everyone else!)

On Nov. 7 each experiment will have 30 minutes to present the physics arguments for its choice. A short summary of these arguments is required by Oct. 20. Please inform W. Bartel or R. Felst if you have any strong feelings on the matter. Telexes have been sent to absent friends, namely Roger Barlow and Robin Marshall. Robin's response was that for the b asymmetry the two choices are approximately equivalent, increased asymmetry at high energy being offset by higher statistical errors. He expressed a slight preference for 22 GeV, coupled with a suggestion that some running at 7+7 and 10+10 might be valuable to increase the lever arm at the low end of the s scale.

Next JADE-meeting 18/10/84

S. Cartwright 11/10/84

J. Rosen

MINUTES OF THE JADE MEETING
4/10/84

- Agenda
- 1) Current run
 - 2) Software news
 - 3) AOB

1) Current run.

Herr Rieseberg remarked that an unusually large number of inner detector *spark alarms* have occurred in the last few days. Shift crews are reminded that an *inner detector expert should be called in to deal with these*. Note that spark alarms are silent in the rucksack (the anode and chain current monitors are still running) although they do give the hard trip alarm in the counting room.

2) Software news.

Chris Bowdery pointed out that the Heidelberg Monte Carlo events documented in F11BET.MCINFO(FILEINFO) have a new DCB from 9/7/84. The new format saves tape and CPU time. However, if "new" and "old" datasets are concatenated, the "new" (post 9/7/84) datasets **MUST COME FIRST**, otherwise the job will die with error IHO218I. This is because of the IBM rules for concatenating datasets.

Chris also summarised the features of the new Generation 8 TP program. This includes parabola refit and common z-fit (P. Steffen) for PATR tracks, and z-recalibration and refit. New flags have also been added. The model JCL members for the new TP program will be #RUNTP and #RUNTPC (the latter copies the tape input to a temporary disk, thus using only one tape unit), but old JCL will still run, as defaults for the new flags are set up. A JADE Computer Note describing the program is in preparation, and the new JCL members will be released when it is ready.

3) AOB.

Wulf Bartel reported that the Genoa HERA-meeting has produced a merger between the son-of-JADE and son-of-CELLO groups. The new collaboration ("JELLO"?) comprises 22 institutions and about 150-200 people.

Wulfria also announced that the first two weeks of the November shutdown will be used to run cosmics for z-chamber calibration. After this the experiment can be opened for maintenance. Anyone who wants to do anything should contact Wulf so that a schedule can be drawn up. It seems that technical support from DESY will be available, contrary to earlier beliefs.

People are reminded that the PETRA energy for 1985 will be decided in the PRC meeting on November 7. At present there are two options being canvassed: TASSO would like to remove all 7-cell cavities and 1 GHz cavities and run below 18 GeV for maximum luminosity (they dream of 800 nb^{-1} per day); Mark J and CELLO would remove only the 1 GHz cavities and run at 22 GHz. If you have strong feelings either way, show your evidence to Rolf Felst.

P. Laurikainen said that the FAMP has been ON for the past week without sabotaging the online system. The question now is what to do with it, in view of the fact that what it was originally going to do is now being perfectly adequately handled by the Nord. At present the problem is that the FAMP FORTRAN compiler will not itself compile on the Nord or, so far, on the IBM. It does work on VAXes. Rolf Felst said that we will shortly have access to a VAX, thus this may not be an insuperable problem. If you have a good idea for a FAMP application, please tell Laurikainen.

Next JADE-meeting 11/10/84

S. Cartwright 5/10/84

Olson

MINUTES OF THE JADE MEETING
20/9/84

- Agenda
- 1) Next week
 - 2) Next year
 - 3) Radiative and single π^0 decays of D^* and F^*
 - 4) AOB

1) Next week.

R. Felst summarised the timetable for the DESY 25th anniversary celebrations next week. The official celebration, with many notable guests including the President of the Bundesrepublik, will be held on Monday morning at 10:00, in the tent behind Guesthouse I. People who wish to attend (everyone is invited) should be seated by 9:45. On Monday afternoon the talks will be more scientific in content and will be held in the Hörsaal. The DESY Theory Workshop will take place on Tuesday and Wednesday, and on Thursday there is the DESYfest. Finally, Saturday 29th is Open Door day. Although JADE is not on the official tour, anything not securely locked will be considered open. Therefore Saturday day shift should be there to prevent lost tourists from electrocuting themselves, even though the machine will not be running, as the tunnels will be open to visitors from 9:00 until around 17:00.

2) Next year.

There will be a PRC meeting to decide on next year's PETRA schedule on November 7. This will probably include some open presentations. The current situation is that TASSO would like to run at 18 GeV to maximise luminosity, whereas the other three favour a somewhat higher energy.

3) Radiative and single π^0 decays of D^* and F^* .

Steve Wagner presented the current status of his search for the decays $D^{*0} \rightarrow \pi^0 D^0$ and $D^{*0} \rightarrow \gamma D^0$. In both channels a small (3σ) signal is seen, which is approximately as expected. Final cross-section values must await higher statistics Lund 5.2 Monte Carlos for correction purposes.

In addition, Steve has looked for the radiative decay of the F^* . No signal is seen, and an upper limit will be calculated when the new Monte Carlo is available.

Finally, Steve demonstrated that 3σ signals can also occur where they are *not* expected!

4) AOB.

Siggi Bethke explained that the fact that the inner detector can often not be switched on at the start of high energy (23.285 GeV) fills, even when the TOF-rate seems low, is not an error in the ID trip mechanism. In fact this is because the correlation between TOF-rate and ID-current at 23.285 GeV is quite different from that at 22.100 GeV, so that in comparing the two the TOF-rate at the higher energy is misleadingly low. There is little that can be done about this, except for insisting on optimization if conditions are bad.

Alfred Petersen said that tape REDUCONE 866 (run 17493) from Rutherford, which was missing, has been discovered lurking under a wrong label, and is now available.

Chris Bowdery announced that the new Generation 8 TP program is ready for use, and requested permission to gobble up large amounts of CPU time in reprocessing all the multihadron files. A decision on how much he may consume has been deferred until all interested people can be consulted.

Next JADE-meeting 27/9/84? (Probably won't happen—DESYfest!)

S. Cartwright 21/9/84

J. Felst

MINUTES OF THE JADE MEETING
16/8/84

- Agenda 1) Current run
 2) New LG calibration

1) Current run.

Beate Naroska reported that there is a possibility that a new super-conducting cavity will be tested in the current run-period. This would involve two shutdowns of about one week each, and would take place after the end of the high energy running, i.e. at least four weeks from now. However this schedule is not yet finalised.

R. Felst said that the directorate wishes to talk to the "scientific community of DESY" about DESY politics etc. Anyone with suggestions for discussion — or thoughts about whether such consultations are useful at all — should contact Felst, or P. Söding directly.

Rolf Felst also said that it is planned to issue an erratum to Sau Lan Wu's epic on five years of PETRA. If you have spotted any gross distortions of emphasis or errors of fact in this report, please inform R. Felst by Monday morning at latest.

2) New LG calibration.

Kawamoto's new LG calibration, reported in the JADE-meeting of 14/6/84, will be installed in the standard libraries on MONDAY 20/8 AT 09.00. As this involves changes to the programs as well as the calibration files, *do not submit any jobs around this time*. If you have private load modules involving LG programs they should be re-linked.

Next JADE-meeting 23/8/84

S. Cartwright 16/8/84

P.S. MINUTES OF THE JADE MEETING, 9/8/84 — Nothing happened!

Olsson

MINUTES OF THE JADE MEETING
2/8/84

- Agenda 1) New collaborators
 2) Miscellaneous

1) New collaborators.

R. Felst introduced to the collaboration the new Diplom students Peter Petersen, Mathias Pfeiffer and Wolfgang Schnitt, and two summer students Holger Ewen and Martin Neschen. The Petersens will now join the Wagners in adding confusion to the shift list.

2) Miscellaneous.

Wulfrin Bartel discussed the proposed method of repairing the data taken with exchanged cables in the jet-chamber. The main effect of this exchange is an inefficiency in the mipro trigger checking. About 1000 nb^{-1} of data are involved, the inefficiency affecting mainly $\gamma\gamma$ events. Since the data failing the trigger check are lost anyhow, it was decided that it will suffice to redo the pattern recognition on the REDUC tapes (i.e. REDUC1 will not be redone). This will be carried out at Rutherford.

Jan Olsson said that the background on his shift last night was very low, and he felt that the barrel septant trigger could be re-installed. However it was pointed out that the background has not been consistently low recently. The conclusion was that a test re-installation should be tried in order to assess the effect on deadtime.

Howard Mills detailed some minor changes to the Nord programs, and commented that the z-chamber online display now works. Asked when the high-voltage control for the z-chamber would be ready, Richard Hedgecock explained that he is waiting for two meters from Rutherford Lab intended for background monitoring. However if the rest of the unit is completed before these meters arrive, he will consider installation with the presently available meters.

Tohru Takeshita said that a defective LG power supply has been replaced. The problems recently experienced should therefore not re-occur.

Karl-Heinz Hellenbrand complained that the TOF rate is a poor indicator for background. Wulfrin Bartel said that a good measure is the number of random hits in the jet-chamber, which can be obtained from the SYNRAD histograms, but this is too long-term to be used for optimization. Hanns Krehbiel said that it is planned to send the jet-chamber anode current to PKR, and Matsumura is working on the hardware to do this.

Chris Bowdery said that comments on the B lifetime paper should be given to him by the end of next week if possible.

The great office moving saga continues. The current record is held by Peter Petersen with a one-day tenure. The next major move will be the Manchester/Lancaster group (from 1D to next to the Rutherford office). The inhabitants of 1C first floor will have to move upstairs, but these rooms are not yet vacated.

Next JADE-meeting 9/8/84

S. Cartwright 2/8/84

J. E. Olsson

MINUTES OF THE JADE MEETING

25/7/84

- Agenda
- 1) Current run
 - 2) Status of data acquisition
 - 3) AOB

1) Current run.

PETRA will continue to run at the present energy, at least for the time being. CELLO would like to stay at this point for at least 10 pb^{-1} — they have excellent (!) background conditions at present. MARK J would prefer to run at higher energy if this becomes possible.

PETRA may be affected by the construction work going on near the JADE hall. During this work the water table in the area will be lowered by pumping, and it is expected that this will result in a lowering of the PETRA ring by 1–2 mm. The effect on PETRA performance is not known. Concern was also expressed that the vibration due to the pile-driver may be having adverse effects on the JADE hardware.

2) Status of data acquisition.

Howard Mills discussed the recent problems with high deadtime. The difficulty is associated as usual with a high raw trigger rate and high background in the jet-chamber. Typically there are about 320 synchrotron radiation hits per event at present, resulting in a very low z-vertex rejection rate from the miproc. (The T2 trigger check rejection rate is very high.) To alleviate the deadtime problem with the minimum loss of useful information it was proposed to switch off the Nord z-vertex routine. The major side-effect of this is to render the online "multi-hadron" count highly unreliable; this could be improved by running the z-vertex package for multi-hadron candidates only.

Howard also reported that the new version of JDAS for z-chamber readout has been successfully tested in terms of both CAMAC readout and Nord monitoring. As the REFORM job has also been modified, we can start taking z-chamber data as soon as suitable high-voltage control equipment and monitoring has been installed in the counting room.

3) AOB.

Peter Steffen gave a brief summary of results from the Leipzig conference. Most results of relevance to e^+e^- physics have already been reported in DESY. New values of the B lifetime were presented by DELCO and TASSO, but not by Mark II.

Next JADE-meeting 2/8/84

S. Cartwright 30/7/84

Olsson

MINUTES OF THE JADE MEETING 12/7/84

Peter Davies, a graduate student from Manchester, was introduced to the collaboration.

Rolf Felst outlined the Leipzig conference pretalks to be given over the next few days. Peter Steffen will present the new JADE results to DESY on Saturday morning, and he will give his pretalk to the JADE collaboration tomorrow afternoon (time and place T.B.A.). Chris Bowdrey and Jan Olsson will give their pretalks Monday afternoon.

Sakue Yamada presented Minowa's measurement of R using the recent scan data. He gave a brief summary of the final analysis, and used the results to put limits on narrow resonances and composite scalars. Values for α_s and $\sin^2 \theta_W$ were extracted from a fit to this data and the other JADE precision R measurements, and lower limits for the quark form factors Δ_{\pm} were given.

Sachio Komamiya presented more limits from his search for scalar quarks, this time concentrating on the decay $\tilde{q} \rightarrow q\tilde{g}$.

Peter Steffen presented results from the B lifetime studies, and discussed the other topics which he will present on Saturday morning.

MINUTES OF THE JADE MEETING 19/7/84

Beate Naroska reported on the PETRA scheduling meeting. A vacuum leak in a cavity in the West area is preventing us from going above 23 GeV, so we will continue taking data at 22.1 GeV and PETRA will be down one day next week to attempt again to repair the problem.

Rolf Felst said that TASSO had also measured the B lifetime, and discussed the preliminary results which were given to him.

Hans Rieseberg reported the discovery of two interchanged cables on the I.D. (for this running period only). Wulf Bartel said that it is necessary to rerun the REDUC1 program on the data, but that we don't need to do the M.H. selection again.

Felst showed a picture of a typical junk event which turned up during the present run. There was general agreement that this was a hardware problem, probably due to pickup, and it is being investigated.

Next JADE meeting 26/7/84

S. Wagner 23/7/84

Olsson

MINUTES OF THE JADE MEETING
5/7/84

- Agenda
- 1) Current run
 - 2) Luminosity measurement
 - 3) Measurement of η -width in $\gamma\gamma$
 - 4) AOB

1) Current run.

PETRA will be down for about eight hours from 08:00 on Friday July 6, to repair the cooling system for the PETRA magnets.

The rescan of the 22 GeV region has now finished and we are running at an energy which can be comfortably maintained by the PETRA hardware. Next week another attempt to run at higher energy (23+ GeV) will be made.

The magnet Vorlaufdruckprimär alarms which are occurring fairly frequently at present appear to be correlated with the cleaning of the filters in the cooling pond. This is done every three hours round the clock.

Soft trips of the inner detector due to spikes in the TOF-rate have been reduced by modification of the alarm circuitry, but still occur.

2) Luminosity measurement.

S. Yamada reported on an investigation into the discrepancy between the Bhabha and tagging online luminosities. With present constants the Bhabha luminosity exceeds the forward lumi by a factor of 1.5. The problem seems to be a thick flange on the vertex chamber which just overlaps the inner edge of the endcap lead-glass. The result is that a large number of low-energy (degraded) Bhabha events are recorded in the endcap, thus distorting the luminosity. Only the inner part of the EC is affected, thus the off-line luminosity, which uses only a restricted angular region in the middle of the endcap acceptance, seems to be free of problems within the present statistics. The situation will be monitored as more data are obtained.

3) Measurement of η -width in $\gamma\gamma$.

Gus Zorn reported on a measurement of η -production by $e^+e^- \rightarrow e^+e^-\eta$. The analysis was done by Bice Zorn and Jan Olsson using the 1982 data with the Jan Olsson trigger. A clear η signal is seen and the measured width $\Gamma_{\gamma\gamma}^{\eta}$ is in agreement with that previously reported by the Crystal Ball. The only problems are the extremely limited amount of separated beam data for background subtraction, and some inconsistency in the normalisation of what little separated beam data we have.

4) AOB.

Robin Marshall will be in DESY at the beginning of next week, and will give a report on his studies of b quarks on Tuesday morning (July 10). The exact time and room for this talk will be announced later.

Next JADE-meeting 12/7/84

Robin Marshall, flavour separation, 10/7/84 (time to be announced)

Olsson

MINUTES OF THE JADE MEETING 28/6/84

- Agenda 1) Current Run.
 2) Conferences.

1) Current Run.

Wulf Bartel reported that the JADE magnet power supply is broken, due to a broken cooling hose and an automatic alarm which didn't sound until after a choke had overheated. The choke is being replaced and should be fixed by tomorrow afternoon. There will be no shifts until then, though the people on day shifts should check the temperatures every few hours. (Note: The power supply was repaired by Friday afternoon and data taking was resumed.)

Howard Mills gave a summary of the status of the on-line programs. Due to better running conditions this week, the z-vertex analysis has been switched on and the PATRCH hit limit has been raised to 400. Howard mentioned that we need a raw trigger rate of <3 Hz for smooth running of the data acquisition system, and while we have achieved this rate this week, many of the triggers are still switched off. The batch processor, which use to be handled by ZDAS, has been moved to a separate RT task, and other changes to JDAS will be needed to prepare for the new detectors. Howard then showed one event which was rejected by PATRCH because no tracks were found, but was included in the 5% of rejected events which are saved and was noticed by the shift crew. The event has two obvious tracks which were found by PATRCH on the IBM. The IBM fast PATRCH also found the two tracks, and when the event was reanalysed on the NORD, the tracks were found this time, a most confusing result. The other rejected but saved events were searched for other examples and while some were found, these were not as serious and were do to a loophole which has since been corrected. The agreed upon course of action was to keep going as is, and to continue to search for the cause of this problem.

The discussion then moved to the super-LG events. Hiroshi Takeda said that these events have only appeared in this running period, are correlated with the beam crossing but appear 50 nsec before the actual crossing, and have junky Jet and μ chamber hits 50% of the time. The TOF counters and the LG energy triggers are not set, but lots of clusters are found in the events.

Austin Ball notified people that windows and doors should be opened when the extractor fans are turned on, because otherwise the pressure change plays havoc with the μ chamber gas supply system.

Beate Naroska ask about the difference between the LG and tagging counter on-line luminosities, as the LG lumi is about 1.5 times the tagging lumi. It was felt that the change in the LG lumi was due to a change in the endcap LG acceptance caused by the new beam pipe and vertex chamber, and that the tagging counter on-line lumi should be used until this is resolved.

2) Conferences.

Bartel gave a rundown on the status of the Leipzig Conference presentations being given, and which DESY people were giving talks and so should be given the JADE contributions. The DESY pretalks will be given on Saturday July 14th, and JADE new results and pretalks will be given at the regular JADE meeting on July 12th, except for Robin Marshall's results, which will be given at a special meeting (time and place to be announced) earlier that week.

Next JADE meeting 5/7/84

S. Wagner 10/7/84

Olsson

MINUTES OF THE JADE MEETING 21/6/84

- Agenda
- 1) Current Run.
 - 2) Miscellaneous.
 - 3) Physics Results.

1) Current Run.

Beate Naroska reported that it was necessary to replace two cavity windows in the West area, and that two more windows are getting hot. There is also a vacuum problem which results in the fact that full power can not be put on some klystrons. This means that the beam energy will be lower for now, and the start of the high energy rescan will be delayed.

Jan Olsson stated that a Camac crate is in the broken equipment area, and the responsible party should claim it.

Siegfried Bethke reported on the temperature problem in the electronics room. There are now three compressors, but one of them switched off this morning. It was necessary to turn off the FADCs in order to get the temperature below 20° C, which is the maximum allowable for the DL8s. The temperature is still above 19°, so there was general discussion of how best to deal with the problems of additional heat generated by the new electronics and compressor failure. The general consensus was to wait for the heat wave to pass.

Rolf Felst mentioned the high background, and brought up the fact that the results of the the NORD-10 and MICPROC vertex finding packages are often uncorrelated. Howard Mills then described the differences between the two programs, and said that the MICPROC rejects only events with good (quality flag 3) vertices.

2) Miscellaneous.

Chris Bowdery asked if anyone knew what happened to the 1979 M.H. data set, which has disappeared from the MSS, and had to be restored from tape. (This later turned out to have been the result of a MSS hardware problem.)

Hanns Krehbiel said that Masbender found oil in the Gould plotter water troughs, and ask people to be more careful in maintaining it.

Alfred Petersen presented Felst with a present from the collaboration, which was meant to have be finished in time for the JADE fifth anniversary party.

Felst read a letter which said that all gas mixtures will now be provided by Herr Haladin, X3663.

3) Physics Results.

Hiroshi Takeda reported on his study of the reactions $e^+e^- \rightarrow e^+e^-$ and $e^+e^- \rightarrow \gamma\gamma$ using the energy scan data (an endcap integrated luminosity of 14.2 pb^{-1} at $39.79 < E_{c.m.} < 46.78 \text{ GeV}$). He presented the two cross sections measured in the barrel, which show no deviation from Q.E.D. expectations, and used the data to put limits on the masses of composite scalars.

Naroska presented the cross section and asymmetry for the reaction $e^+e^- \rightarrow \mu^+\mu^-$ measured using the scan data.

Felst mentioned the possible top signal being reported by UA1 at recent conferences, with five $e + 2 \text{ jet}$ events being used to put limits on the top quark mass of $30 < m_t < 60 \text{ GeV}$.

Next JADE meeting 28/6/84

S. Wagner 1/7/84

John

MINUTES OF THE JADE MEETING
14/6/84

- Agenda
- 1) Current run
 - 2) Status of lead-glass calibration
 - 3) AOB

1) Current run.

Siggi Bethke reported on the new start-up procedure and some new soft trip conditions for the inner detector. In the past the beam pipe counter current was used to estimate the background before switching on the inner detector. Since these counters are no longer there, they can no longer be used. The TOF-rate will therefore be monitored instead. A row of three new analogue meters has been installed near the colour TV: these show (left to right) deadtime, TOF-rate and jet-chamber current. The new procedure is as follows:

- (1) Don't switch on the I.D. if TOF > 1.5 V. (Check the meter range!)
- (2) Don't switch on if the TOF is noticeably unstable.
- (3) When switching on, watch the jet-chamber current for a few minutes (this meter starts to read towards the end of I.D. voltage runup).
- (4) If the j.c. current is < 3.5 μ A and stable, start run. Log j.c. current and TOF-rate in run-book.
- (5) If j.c. current unstable or > 3.5 μ A, SWITCH OFF inner detector and wait for better beam conditions.

If the TOF-rate is > 2 V, there will be a soft trip of the inner detector. Within the next few days a soft trip for j.c. current > 3.5 μ A will also be installed.

Beate Naroska reported that the remote control for switching on the tagging high voltage was not functioning, necessitating startup by Beate's TOF-program or manually at the mainframe. This problem is, however, now fixed (John Nye).

Howard Mills summarised assorted difficulties with the online program. Recently there have been a number of Nord-50 crashes, a problem not previously encountered and apparently linked to the present very high trigger rate (~ 10 Hz). The symptom of this problem is a message "N50 BUSY" on the colour TV. If this occurs, stop the run, enter "ABORT-N50" on the console, and start another run. (Don't reload the N10 — it won't help and is just a waste of your time.) The problem seems to lie in the intercommunication between the N10 and the N50, and it is *not* expected to be fixed. It will go away if the trigger rate decreases.

YVOLTS complains about "power supply" (actually, distributor) 15. This is a known intermittent hardware problem (Beate). Ignore it.

DON'T put notebooks on top of the terminals (it blocks their ventilation)

When set at 500 A, the magnet has a tendency to "walk" to ~ 1300 A, and will not then respond to computer control. The cure for this is to reset it manually, and instructions on how to do this will be put in the counting room. *There is NO NEED to call in the magnet people under these circumstances!*

Wulf Bartel explained that the cause of the high trigger rate is bad vacuum in the JADE interaction region (about 100 times worse than anywhere else) caused by outgassing from the new beam pipe. This will take about 4 weeks to go away. In the meantime the removal of the EC \times Barrel asymmetric lead-glass trigger, which is little used and has a very high rate, may improve the situation. Running in the NW L and R collimators to 7-7.5 mm also helps: PKR have to be asked to do this (they will not volunteer) and some PKR operators do not know how.

The temperature alarms have been disabled at present because of the danger of people working in their vicinity accidentally tripping off PETRA. This should not be a problem as there are plenty of other alarms if anything serious goes wrong!

Please submit REFORM jobs!

2) Status of lead-glass calibration.

Kawamoto reported on the modification of the lead-glass calibration to account for the "new" SF6 blocks. Low Bhabha statistics due to the low luminosity during the scan have delayed the calibration process. However, progress is being made, and new calibration constants for 1983 should be available soon. The resolution, though not as good as was hoped, is much better than would have been possible with the old SF5 blocks.

3) AOB.

People with results for the Leipzig conference are reminded that the deadline for submission of papers is next week.

Next JADE-meeting 21/6/84

S. Cartwright 15/6/84

Olson

MINUTES OF THE JADE MEETING
7/6/84

- Agenda
- 1) Current run
 - 2) Status of online program
 - 3) Status of z-chamber software

1) Current run.

The Pfingsten mini-shutdown will run from Friday 21:00 to Tuesday 8:00. After this PETRA will run at $E_{\text{beam}} = 23.285 \text{ GeV}$ for at least 1 pb^{-1} . The coordinating experiment will be CELLO.

The superconducting cavities due to be installed this shutdown were not in fact put in, and could not be operated anyway while PETRA is running with high beam energies. They will be installed at some later date.

The new PETRA coordinator is Herr Leneke, and the technical coordinator is Herr Mommsen.

2) Status of online program.

Howard Mills gave a summary of the state of the online program, which will need substantial modifications to accommodate our new components. Due to the intervention of an unexplained hardware fault in the Nord which prevented intercommunication between the Nord-10 and the Nord-50, much of the required work could not be done before PETRA startup. The basic problem is the lack of room for expansion of the program, making it necessary to compress existing pieces before adding new ones. At present much of the z-chamber software, which is closely related to the existing jet-chamber routines, has been written, and some has been tested with jet-chamber data. Nothing has yet been done for the vertex chamber.

In view of the lack of online software manpower due to the departure of Dieter Cords, Howard made the following requests:

Please read the JDAS manual BEFORE calling out an expert.

Please log any problems.

Please DON'T press "escape" on the terminals, unless logging on — it can cause the terminals to hang up.

3) Status of z-chamber software.

Susan Cartwright summarised the status of offline software for the z-chamber. The necessary graphics routines are already installed in JADEZ, and the Monte Carlo tracking routines exist in a test version. Some work has been done on the linking of z-chamber hits to inner detector tracks. However, little progress has yet been made on the problem of calibrating the data from the z-chamber. At present the priority must be to get the hardware working.

Next JADE-meeting 14/6/84

S. Cartwright 8/6/84

MINUTES OF THE JADE MEETING
1/6/84

- Agenda
- 1) Run start
 - 2) Pretalks for DESY seminar
 - 3) Status of b lifetime paper

1) Run start.

Although there will definitely be no running over Whitsun/Pfingsten, it is hoped that PETRA will start up next Wednesday. Therefore, shifts should be allocated from that date: however, people scheduled to do shifts should check beforehand to see if they will be needed.

2) Pretalks for DESY seminar.

The JADE DESY seminar will consist of two half-hour talks given by Karl Ambrus and Alfred Petersen respectively. Karl Ambrus will describe his search for anomalously ionising charged particles, which was previously presented at the JADE meeting of 29.3.84, and subsequently at the Bielefeld conference. The previously unexplained highly ionising negative track is now understood as a probable momentum mismeasurement. Karl Ambrus may also present the results of Sachio Komamiya's squark search, but these are not yet ready.

Alfred Petersen discussed aspects of fragmentation, comparing the JADE data with several well- and little-known fragmentation models. The results presented are essentially those to be found in his current draft paper, plus comparisons with leading-log approximation based models (Gottschalk, and Webber et al.) as summarised in a previous JADE meeting (12.04.84).

3) Status of b lifetime paper.

Peter Steffen briefly summarised the results of his discussions with Roger Barlow. The two independent b lifetime analyses produce results in excellent agreement and a joint second draft can be expected shortly.

Next JADE-meeting 7/6/84

JADE fifth birthday party 7/6/84, at R. Felst's.

S. Cartwright 1/6/84

MINUTES OF THE JADE MEETING 26/4/84

- Agenda
- 1) Shutdown.
 - 2) Miscellaneous.
 - 3) Unusual Events.

1) Shutdown.

Rolf Felst reported that it has become necessary to overhaul the transformer for the JADE magnet, and that there is the possibility that this will not be finished by the end of the shutdown, as a complete overhaul will take more than six weeks. The option of just redoing the winding, which should take less time, is being investigated.

Felst read a letter from Paul Söding as to what PETRA will do after the end of this shutdown. The 1 GHz cavities will be left in, and we will accumulate another 1.5 pb^{-1} at energies above 46.3 GeV. If the indication of interesting physics above this energy is not confirmed, we will go to some energy around 44-45 GeV and try to accumulate maximum luminosity.

2) Miscellaneous.

Felst reported that, due to the HERA approval, construction will begin on the tunnel, but there will be no construction on the DESY site for now. Letters of Intent for HERA experiments are ask for on June 30, 1985. There will be a HERA workshop at DESY on May 30.

There was discussion as to what should be presented at the upcoming DESY seminar for JADE. It was decided to ask Karl Ambrus to present the results of his search for unusual charged objects using dE/dx , which he presented at a recent JADE meeting.

There was a discussion of which of the current JADE results should be submitted to the Leipzig conference, and which of the JADE participants will take responsibility for them.

3) Unusual Events.

Siegfried Bethke presented an event selected by Karl-Heinz Hellenbrand which had two high- p_T electrons and probably two jets. This was a flat event, and the dielectron and jet-jet masses were given. It was stated that there are four or five others like this one (which is Event 5538, Run 10156), of which this was just the most spectacular.

Tohru Takeshita presented preliminary results from his study of double tagged (in the lead-glass) two-photon events. The numbers of the different types of gamma-gamma events were given and compared to Monte Carlo expectations. The event presented by Bethke also turned up in the double tagged event sample, which highlights the difficulty of looking for CELLO or Mark-J events using electrons instead of muons.

Austin Ball showed one dimuon event which he had found while searching for CELLO-type events. This is the event also found by Hugh McCann, using different selection criteria.

Sakue Yamada summarized the results of Minowa's search for dimuon events, which yielded Austin's event and two others.

MINUTES OF THE JADE MEETING 3/5/84

J. von Krogh gave a brief summary of some interesting results from the Vanderbilt conference, in particular results from TPC which agree with the published JADE results favoring Lund

string fragmentation over independent fragmentation in distributions such as charged particle flow. He will present more results from the conference at the DESY seminar next Tuesday.

MINUTES OF THE JADE MEETING 10/5/84

Austin Ball described the background problem in the muon chambers at high beam energies, presented the results of the tests which were performed during the last run to determine the optimal amount of shielding to correct this problem, and described the locations and amounts of shielding which were installed during this shutdown.

Next JADE meeting 24/5/84

S. Wagner 23/5/84