Minutes of the QQ̄ group meeting
Cern, 8 June 1989.

Present: B. Altoon, F. Bird, E. Blucher, C. Booth, G. Cowan, M. Dinsdale, F. Fidecaro,

LL. Garrido, C. Grab, A. Halley, S. Haywood, J. Harton, H. Hongbo, E. Neugebauer,

F. Palla, M. Pepe, P. Perez, F. Perrier, J. Rander, A. Roussarie, R. Settles, E. Simopoulou.,

R. StDenis, I. ten Have, H. Videau, H. Wachsmuth, S. L. Wu, D. Zwierski

(list may be incomplete).

1) A. Blondel first apologized for the late announcement of the meeting, due to problems with the electonic mail. He then emphasized that we should have everything ready as if we were to analyze 10'000 events tomorrow.

2) F. Perrier studied how to measure forward-backward asymmetries with quarks. This requires a method to measure correctly the direction of, for example, the positively charged quark. Assuming a given probability to misidentify the positive quark, he discussed statistics and systematics of the measurement. Systematics turns out to be high, making this measurement not so easy.

3) A. Roussarie discussed how to measure forward backward asymmetries using the charge of the leading $K^{\pm}$. The MC truth was used first to check whether the method is sensitive enough to the parent b, c or s quark. The $K^{\pm}$ identification was then studied, using TPCSIM on the IBM. Finally the method was compared to the results with muons and found to be competitive.

4) I. ten Have studied how to determine the charge of the parent quark by weighting momenta of the outgoing particles. The importance of fragmentation functions was discussed.

5) G. Cowan discussed another method to find the total energy in the event combining calorimetry and charged tracks. Preliminary results show a small improvement with respect to the energy from the cal. objects. Future work includes the comparison with the reference work on energy flow made in Aleph.

6) P. Perez presented work on the Level 1 trigger and event selection. He recalled the request from the Trigger group: "every physics group has to check the trigger and feed back to the Trigger group". Lund events were used to check the ITC and the calorimeters. Thresholds were varied. Then some systematic checks were performed comparing the contents of the trigger banks with results from Julia. Pathologies have shown up, indicating some simulation bugs.
For event selection, a first attempt at defining a good track was made. Cuts on distance of closest approach and z-coordinate of the point of closest approach to the beam axis were shown. These would restore the expected distributions for tracks. The effect of these and also other cuts on $q\bar{q}$, $\gamma\gamma$ and $\tau\tau$ samples was discussed.

7) S. Haywood stated that some cross checks should be provided to check the quality of reconstruction. Event scanning would also be useful. He has already a 2-3 pages/event

output to list quantities useful for event scanning. He also discussed the need for a standard event display to spot reconstruction problems.

8) Ll. Garrido discussed methods to fit the line shape taking into account the effects of both invisible decays and new hadrons, namely the correlation between Γ_Z and σ_{peak}. He also showed how the precision would vary as a function of the number of points taken on the sides of the maximum of the line.

9) Despite the late time, the audience was delighted to see J. Harton fitting "on line" the SLC data. Results are available from the author.

10) In the general discussion, kept very short, A. Blondel mentioned that event scanning would be organized by E. Simopoulou. He reminded the group the following homework:

- cut on low Θ in calorimeter acceptance
- signification of s_{min} in Lund generator and line shape program
- trigger and tracking efficiency measurements
- code for cross section on line

11) The next meeting was fixed on :

Wednesday 19 July at 9:30