Short list of questions for CMD-3 seminar Monday March 27
(numbers refer to the complete list)

Separation e/μ/π

Question 2
Fig.3-4 show 2D-plots for the momentum and energy deposition methods at 2 CM energies, one where each method work best (0.5 GeV for momentum and 0.956 GeV for energy) and the other at their limit where they do not perform well but are still used (0.9 GeV for momentum and 0.548 GeV for energy). In the comparison with other experiments the problematic region is 0.6 - 0.8 GeV. Need to see the corresponding plots at these energies, i.e. 0.6, 0.7, 0.8 GeV.

Question 6
The 2D reference distributions contain 36 and 57 parameters treated as nuisance parameters in the likelihood fit. Provide more information on the nature of these parameters, their time dependence, the checks with data and how they impact the systematic uncertainty on the cross section. Is it possible to show a data-MC comparison for individual PDFs, e.g. by applying strong cuts for one of the tracks?

Question 8
Fig.8: the double ratio $N_{\pi\pi}/N_{ee}$ for the 2 methods is fitted between 0.6 and 0.9 GeV and found to be consistent with 1 within 0.2%. The fit is dominated by the large statistics at the ρ peak while uncertainties are much larger in the tails. Is it reasonable to quote a constant systematic uncertainty on this ratio of 0.2% throughout the range 0.381-1 GeV?

Efficiencies

Question 18
Tracking: clarify the separation made between ‘base efficiency’ (track selection cuts) and inefficiency from sources specific to particle type (decay, multiple scattering, bremsstrahlung, nuclear interactions).

Question 19
Tracking plots are given for MC simulation only. Need to see data/MC tests.

Radiative corrections

Question 26
Two generators used (MCGPJ, BabaYaga) NLO+NNLO approximative with some differences found for ee: give more information. Does it affect also the μμ and ππ samples?

Question 30

How can you justify a 0.2% error for the ππ mode in MCGP given the large uncertainties seen for the Bhabha mode?

Question 32
The RC are large +8% at 0.9 GeV and -9% at 0.7 GeV. What is the uncertainty specific to this analysis, from the used generators. The number 0.2% quoted is for the integrated cross sections ('declared' by MCGPJ authors) , but apparently not listed in Table 2. Also what about NLO+HO differential cross sections? Need to be clarified.

General questions

Question 43
Since it is only mentioned without any detail in the conclusion, can you clarify how the blinding of the results was achieved?

Question 46
The paper cannot avoid a study and a discussion concerning the CMD-2/CMD-3 strong discrepancy which are absent at the moment, despite similar detectors, analysis and group: outline the major differences in the detector and the analysis procedure, compare distributions, dig out where the problem occurs.
seen for the Bhabha mode?

Question 48
The central values of the K+K-, π+π-, ancillary 3π measurements all tend to be higher than other experiments at a similar level of 4%, which of course for the 2π channel looks most spectacular. Have possible common systematic effects across channels been investigated?

Question 49
What are the plans for publishing this analysis: short/long papers? Do you intend to perform additional checks before submitting to a journal?