SUMMARY OF RECOMMENDATIONS

26th LNF Scientific Committee Meeting (May 2003)

The Committee has listened carefully to the detailed reports of the Director and of the Leader of the Machine Division on the progress of DAΦNE during the shut down. The Committee has appreciated the long list of interventions that have been done on the whole machine and in particular has been very happy of the complete shimming of all wigglers, anticipating an important work that was planned for a future, long shut-down. This decision has allowed reducing two long shutdowns to only one, even if a couple of months longer.

These hardware interventions should largely simplify the understanding of the behavior of DAΦNE, allowing the experts to produce a good working model of the machine providing them with reliable on-line feedbacks to their actions. It is clear that the modifications implemented in this period are aimed to understand and possibly to eliminate the limitations to the dynamical aperture, allowing the Machine Division to draw a credible plan that justifies a safe extrapolation of the luminosity to its design level.

The Committee has been satisfied by the large harvest of results, competitive with the PDG data, collected by KLOE and of the large effort done by the group to understand at a deep level all sources of systematic errors.

The Committee encourages the Laboratory to follow the schedule outlined in the discussion, namely to restart the machine with FINUDA, providing them with about 250 pb^{-1}, and to follow with a continuous data taking period of about one year for KLOE with an expected integrated luminosity of about 2 fb^{-1}.

This should surely allow the collaboration to complete the measurements of the radiative decays of the ϕ, but it should also provide the tools for a measurement of V_{us} to a few per mil level and of the hadronic cross-section, mostly into $\pi^+\pi^-$, a measurement that is badly needed to solve the g-2 puzzle. The Collaboration is invited to proceed with its plan of a large MonteCarlo production of 10^9 events and to upgrade its CPU for the next period needs. It is also invited to make a thorough analysis of the request necessary for longer-term evolution, taking into account also the fast evolution of the market.

The Committee is pleased to note that FINUDA has now been installed in the Interaction Region, and congratulates the collaboration on the final assembly of the complete detector. The full detector is already taking alignment data using cosmic rays with the magnetic field off, and should be taking data with the field on shortly. The Committee was impressed with the performance of the VDET, where the intrinsic position resolution already achieved in both ϕ(~12μ) and z (~24 μ) after installation in FINUDA was better than the specification. The Committee endorses the initial choice of targets ($2x^{6}$Li, $1x^{7}$Li, $3x^{12}$C, $1x^{27}$Al, $1x^{51}$V). The Committee looks forward to hearing the results of the first data with beam, and believes that the aim of an integrated luminosity of 250 pb^{-1} is an ambitious but achievable goal.

The Committee has been very pleased to see that DEAR has reached an integrated luminosity of at least 60 pb^{-1}, under very clean machine conditions, completing the planned program. It will wait with pleasure to the next proposal with a triggerable detector for which an active R&D program has already started.