

Summary of Recommendations

24th LNF Scientific Committee Meeting (May 2002)

The Committee has been really impressed by the recent progress in the performance of DAΦNE. The installation of the octupoles and of the scrapers has provided the expected flexibility and the tools which were required for a much deeper understanding of the working conditions of the collider, opening the way to a large and essential reduction of background and promising important steps in luminosity. Proof of this achievement has been the fast and efficient tuning of the machine parameters in the DEAR interaction region, totally autonomous from the information on the machine status that in the past were provided by KLOE.

The Committee congratulates the machine group for having reached the goals fixed in the previous meeting:

- to provide an integrated luminosity of 200 pb⁻¹ to KLOE in the allocated time;
- to provide 1 pb⁻¹ per day to DEAR, allowing the Collaboration to show that the experiment is feasible and to obtain results already interesting now on the Nitrogen lines.

The most important result of the new working conditions of DAΦNE is that the machine is far from the beam-beam limit, what means that the luminosity is expected to increase quickly in the next months, as a consequence of the foreseen programme of optimization (more bunches per beam, smaller values of β_x and β_y , smaller emittance and longer lifetimes). Similar improvements are expected on the background level in the interaction regions.

The Committee has highly appreciated the strong impact that the new machine Director, Pantaleo Raimondi, has had on these achievements and the smooth way in which he has established good relationships with the experimental teams. The Committee is therefore confident that the goals foreseen for the future years are very realistic and achievable.

For what concerns the schedule for the next months the Committee endorses the programme discussed between the Laboratory Director and the experimental groups:

- 1- to continue with the KLOE data taking until the first week of September, providing between 250 and 500 pb⁻¹;
- 2- to move then to DEAR for two months with the perspective of a total of 40-60 pb⁻¹;
- 3- to shut down the machine at the end of October for the programmed improvements;
- 4- at the restart of the activity, it will be the time to begin the FINUDA data taking.

The detailed plans on this new step will be discussed in the November meeting of the Committee.