

Request AGILE - March 2005

First name, last name, email and affiliation of contact person:

Michela Prest
michela.prest@ts.infn.it o michela.prest@uninsubria.it
Dipartimento di Fisica e Matematica dell'Universita` dell'Insubria, sede
di Como
INFN Milano

1. Physical motivation and experimental setup

- Test of the first module of the photon tag facility.

1st step:

The basic idea is to put one module consisting of one silicon detector inside the magnet (without opening the magnet) and, given a magnet current higher than the operational one, have the beam impinging on the silicon detector. Varying the beam energy, it will be possible to calibrate the silicon detector response.

2nd step:

Insertion of the beam chambers before the magnet (in air, thus the vacuum line has to be interrupted). The basic idea is to study the production of photons (once the silicon module has been calibrated). On the photon line, a NaI calorimeter will be positioned in order to measure the energy of the photon to check the calibration of the silicon spectrometer.

This has to be considered a feasibility study of the photon tag facility. The simulation of the setup will be verified.

Since this is the first time this test will be performed, the beam time needed is long. If problems will arise during the measurements, we would like to require further test time later on.

2. The dose that each experiment needs, that means the time of run (I recall that up to now we have a radioprotection limit of 10^3 particle/sec)

1 week

3. The energy or the energy range of operation

50 MeV - 800 MeV

4. The multiplicity required (number of electrons/spill and repetition rate: from 1 to 50 Hz or single shot)

From 1 up to the maximum number of electrons/spill and a repetition rate of 50Hz

5. Time needed for experiment installation and de-installation (before and after beam assignment)

4 hours installation and 2 hours de-installation + time needed to interrupt

vacuum

6. The earliest date for the start of your experiment.

Arrival on the 21st of March to install
Departure on the 27th of March

7. DAQ, cabling, diagnostic devices, etc that you need.

A trigger signal from the accelerator
The interruption of the vacuum before the magnet
The possibility of varying the magnet current