

Hi Alberto,

Sorry for the delay in answering. I was not following so closely the forum.

First, to answer to your last questions.

Indeed, T10 is FRS downscale and do not require a Gamma in AGATA. You can estimate the number of gamma (from hector/agata) that are in coincidence with the Hit-pattern. The hit-pattern can also help you to count the number of ions detected in the SC41 scintillators that have hit the LYCCA calorimeter detectors. what you get with the hit-pattern does not depend on the dead time. It depends only on the threshold set for the trigger of the MBS DAQ.

I am not so familiar with the strict merge option but I can tell you what the "pure mbs events are". They consist of the data taken for any of the MBS trigger (12 different numbers in total). In addition to the T9 (particle-gamma(AGATA) you have T3 (gamma(AGATA) alone) that should be in coincidence with AGATA (with the GTS system, with a matching time-stamp). All the other triggers could have a gamma in coincidence but not necessary. For example, T10 might be in coincidence with AGATA. T8 (particle-gamma(HECTOR)) should not be in coincidence with AGATA, or very rarely (this proportion would depends on your time windows that you use for the data merging).

I think, the two different time of opening file is not a big issue to estimate the number of counts. One just need to restrict the data analysis to the given time-stamp windows where you are sure to have both files open. The other option (that I am using) is to look at the adf file of the mbs data (it is in the folder of the run). This one is ope at the same time as the other AGATA data.

The strict merge option should not be used for cross-section measurement. As you wrote, asking for strict (meaning both a MBS event and a AGATA one, if I understand it right) would mean requiring that a gamma was emitted. Which is not the case. In a previous estimate of the technical commissioning, only 3% of the particle hitting the S421 scintillator were having a gamma ray in coincidence.

To have an estimation of the dead time of the MBS DAQ, you can use two information.

- the first one is from the FRS file sheet, where the 10kHz and 10khz-veto-dead-time give you an average dead time over one spill. (It is better to look at more than one file-sheet since people on shift were not always really cautions in looking at these numbers).
- the second one is, as Michael mentioned it, to look at the scalers (recorded in the data files).

Cheers,
Damian