

Questions to be addressed by the speakers

General

(Some of the questions in this paragraph are addressed by Mika Huhtinen's general talk in session 2, see [here](#), potential overlap to be discussed with him)

What are the types of beam-induced backgrounds which your physics is expected to be most sensitive to?

- * neutrals vs charged ? synchronous vs asynchronous ?
- * explain (affects which physics, which detectors? affects trigger? radiation damage? etc.)

On the basis of what is currently known from simulation of "ideal" or "nominal" LHC background, by what factor could it be degraded before your experiment becomes intolerably affected? (Put in perspective with particle rates from collisions in nominal conditions)

What background monitoring is foreseen in the experiment?

- * focus: monitor of background with circulating beam
 - which detectors ? when are they on?
 - if these are also used in experiment protection, how is it ensured that the thresholds are high enough not to affect efficient LHC operation?
- * but also: abnormal instantaneous rates during injection
 - how monitored ? how triggered ?

How are the various background types (or sources) disentangled from one another?

Experiment data to LHC control room:

It is expected that detailed signals from the experiments will be available to the CCC, allowing monitoring backgrounds. In addition, LHC-OP proposes to obtain a few normalized "figure of merit" background signals from each experiment (analog of BKG1&BKG2 at LEP). Ideally, these should allow a quick assessment of backgrounds in the detectors, the running and data quality, and be somewhat complementary. They should be available before stable collisions are declared. Invalid or missing information should be clearly flagged (e.g. flagged with a negative number).

What background information will be sent to the CCC?

- * meaning of the signals?
- * to what level are beam1 and beam2 backgrounds disentangled ?

LHC data to experiments:

What information do the experiments expect to receive (when? at what frequency?) in order to be able to do proper background monitoring?

If some detector components are reduced in sensitivity or turned off during injection/ramp/squeeze: when will they be turned on? based on which information ?

- * LHC machine mode?
- * background conditions ?
- * machine diagnostics ? (like nearby BLMs ? Collimator positions?)

Discuss special, adverse or undesired beam conditions:

How much is acceptable in terms of...

- * bunch-to-bunch variations
- * luminosity and background variations in time
- * fill-to-fill luminosity and background variations
- * bad vacuum conditions in IR
- * satellite bunches (displaced by 2.5 ns, 5 ns, ...)

During initial running (43x43 or 156x156 bunch schemes):

- * are displaced collisions in your IR of any use or not?
 - if yes, what range of displacement in z ?
- * are a few non-colliding bunches of any interest to your experiment?
 - if yes, how many? how arranged?