**Suggestions for simulations – a compilation of comments and questions**

Suggestion for steps to take:

Step #0. Obtain the results for the exact geometry Parker used. The results should be identical

or close and if differences are observed it need to be understood.

Step #1. Obtain the dose and post-run radiation after a typical Hall C run:

70 \mu A, 11 GeV, on 15 cm LH2 with 6% radiator for 10 days. This will give an intermediate calibration point on the acceptable level of radiation in the hall and radiation after a run.

Step #2. Adjustment of the geometry of CPS: equal radiation outside the shield. Do we need equal shielding in all directions?

Step #3. Create a set of plots to guide the design and cost. Every plot should have information about beam energy and intensity and units used for the results, at least for the plot caption.

Comments on plots shown last time:

1) adjust offset as it looks like we now have too much radiation in the backward hemisphere (slide 17 of Gabriel's talk). If one compares with Parker's results, slide 7, we probably should have shifted with perhaps at most 10 cm (not sure what the shift was, but it is too large). Also the activation levels look worse for Gabriel's results (after one day) than for Parker's (after one hour)

2) for slide 18 of Gabriel's talk, we need to know what the units are. For comparison, slide 6 of Parker's results seems to indicate something like between 10 and 100 rem/hr for prompt at the edge of CPS.

3) we don't quite understand why the activation for setup 2 in the region between R = 100 cm and R = 200 cm seems much worse than for setup 1 on slide 17 from Gabriel's talk. They should be different, but this looks too much for the shielding change made. Plus "too much blue" in the backward hemisphere, but that may be due to a too large an offset/shift.

4) we want radiation levels calculated and tabulated at the following positions:

             a) prompt radiation in the coil: phi = 45 degrees, r= 15 cm at close coil location

      (see geometry on Parker's side #11),

                                      z = -30 cm, 0, and +30 cm

             b) activation (after one hour) and prompt radiation at:

                   z = -2 m       r = 1, 2 and 4 meter         phi integrated over +/-45 degree up

                                                                  phi integrated over +/-45 degree down

                              (rationale of 4 meter is that this is roughly beam height)

                  z = 0 m         r = 1, 2 and 4 meter         phi integrated over +/-45 degree up

                                                                  phi integrated over +/-45 degree down

                  z = +2 m       r = 0.25, 0.5, and 1 m      phi integrated over +/-45 degree up

                                                                 phi integrated over +/-45 degree down

                             (rationale is that 1 m distance allows comparison with cases above,

                              and r = 0.25 and 0.5 meter are relevant for work on pivot