E952

Goal: To produce the excitation function for $E \rightarrow 6.05$ MeV

1. Analysis of data and running GEANT

Leading γ

1. Geant set up
2. Data analyzed
3. Minor loss of statistics and resolution possible. Somewhat increased background under cascade transitions.

Neighbouring γ's

1. Geant set up?
2. Data "analyzed" needs to be rewritten. Data need to be reanalyzed.
3. Likely improved statistics, resolution and background.

↓

Who?

(Root analysis?)

E952

2. Physics input into Geant and Analysis

a) angular distributions and correlations

All γ-rays detected have an angular γ distribution.

Between resonances this distribution is in principle unknown! It depends on the actual population of partial waves.

$E \to 8/6.0$ Γ_{E1}/Γ_{E2} determines ratio.

For the ground state, we can assume E2 is largely dominant, but a somewhat more sophisticated model is possible.

For $E \to 6.0$ there are good reasons to assume it is largely E2.

$E \to 6.9$: $\ell = 0, 2, 4$ possible (easily).
not quite clear-cut, model possible.

$E \to 6.9 \to 0$ cascade: two γ's are correlated → maximum

However: dealing with low statistics
→ distribution as systematic error!

b) Recoils:

Also γ- distrib. dependent

→ deal the same way as with γ's,
i.e. take a reasonable guess and try
to estimate error.

6.0 → 0 (e^+e^-) special case,
include somehow?

→ Dragon acceptance: some variation
of parameters will give reasonable systematic
errors.

Other issues:

γ - spectrum convolution → to be worked on.

absolute normalization:

$\bar{q}_{12}$, $\bar{q}_{16}$ → done

FCM2G elastic → Wolf

Still a DRAGON Large tube measurement
to be done.