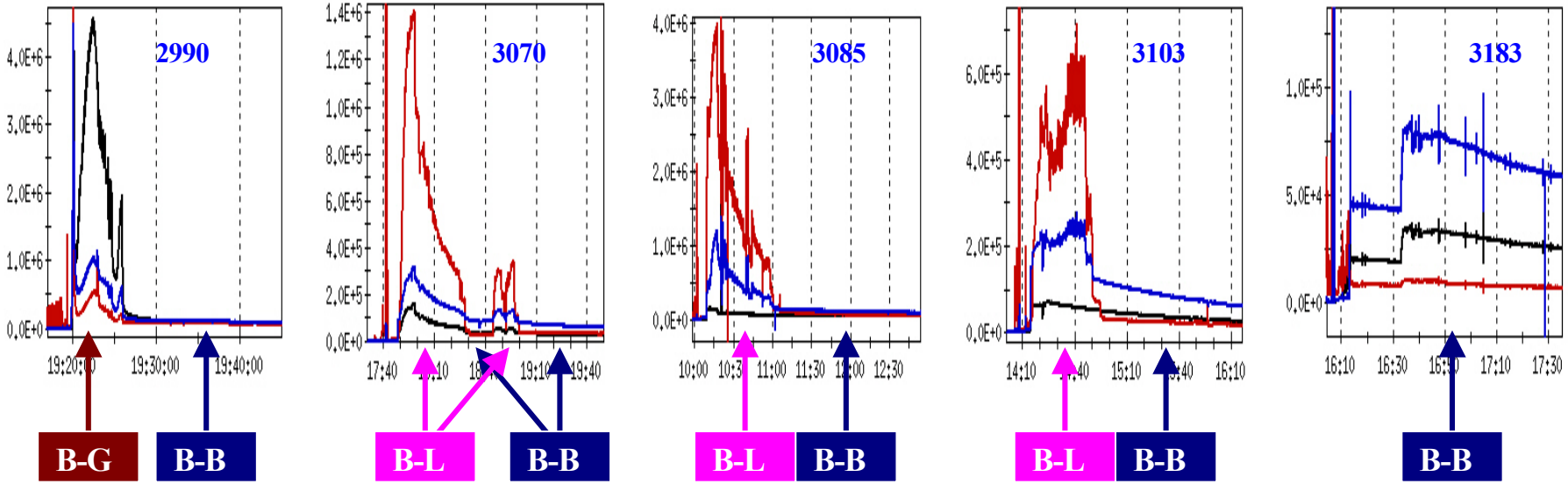
Two issues of 7/24/03 backgound meeting,

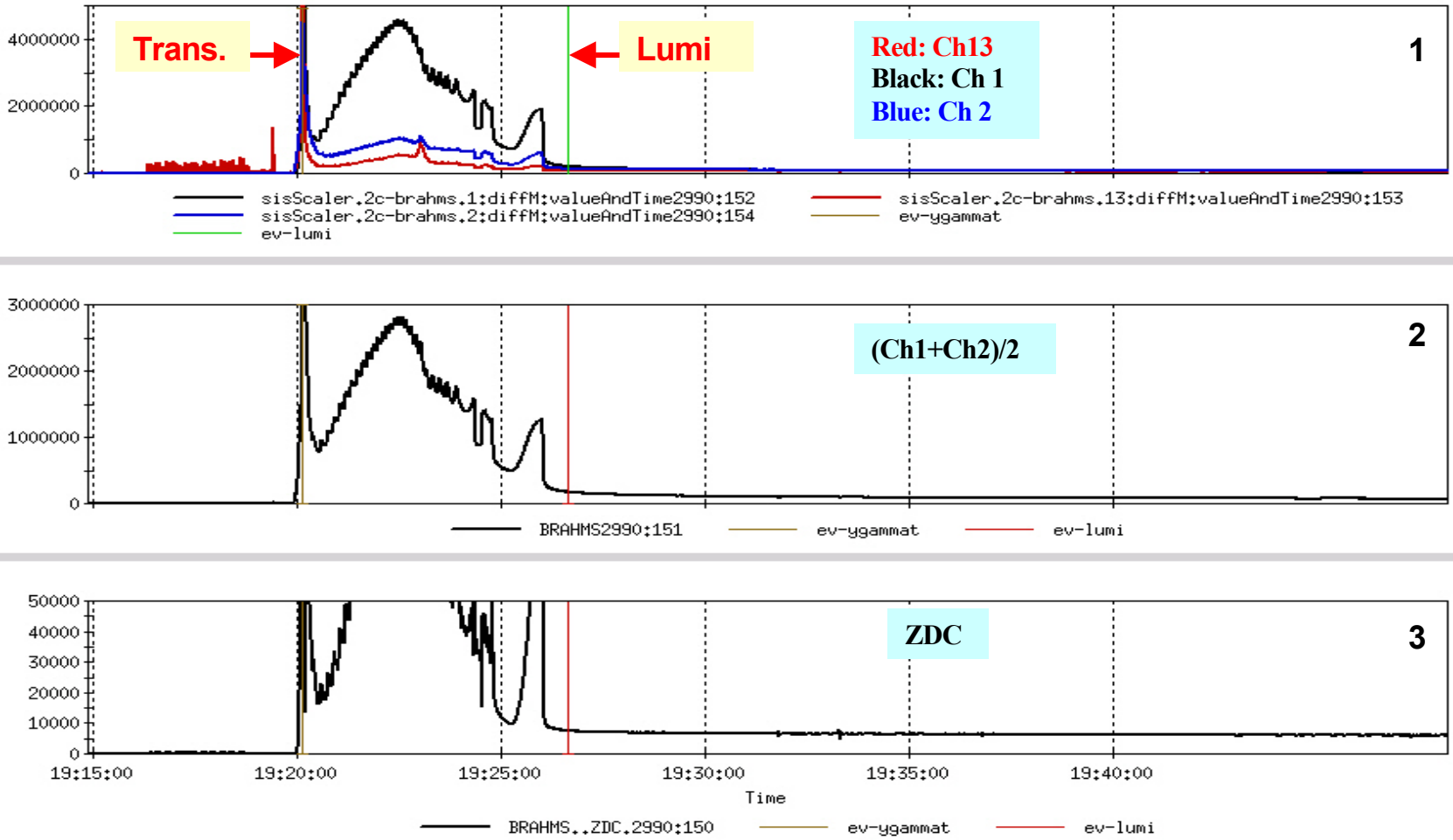
SY Zhang 7/25/03

I. Ch13 vs. Ch1 and Ch2, ScallerDiff.logreq

- Ch1: ZDC singles, d-direction. Ch2: ZDC singles, Au-direction. Ch13: TOF (Brahms).
- Ch13 is very sensitive to beam loss, but not as sensitive to beam-beam (also most beam-gas) created singles. As the results:
  1. For beam loss created singles, Ch13 rate is several times higher than Ch1, 2.
  2. With normal condition (where Ch1 and Ch2 rates are dominated by the beam-beam collision), Ch13 is in general lower than or comparable to Ch1 and Ch2.
- This is shown by the following 5 fills, where
  Red: Ch13, Black: Ch1, Blue: Ch2.
  B-G: Beam-gas background, B-B: Beam-beam background, B-L: Beam loss background.
- Note that for all beam-loss background, Ch13 is very similar to Ch1,2, only difference is in scale.



II. Case of 2990



- Fill 2990 display: 1. Ch13, Ch1, Ch2. 2. (Ch1+Ch2)/2, 3. ZDC coincidence.
- At 30 minutes after the transition, Ch13 = 50 kHz, (Ch1+Ch2)/2 = 68 kHz, ZDC = 6.2 kHz.
- At 2/14/03, before the coherence resolved. ZDC coincidence of 6.2 kHz was considered high.
- Gold beam intensity was 47e9 ions, and deuteron intensity 67e11 ions. 2990 is one of highest intensity fill during the d-Au run.
- The case of 2990 (optics dAu3) shows that Brahms can live well with betastar 2 m, even with high intensity. Cases similar to 2990 include: 2978, 2981, 3002, 3071, 3089, 3094, ...