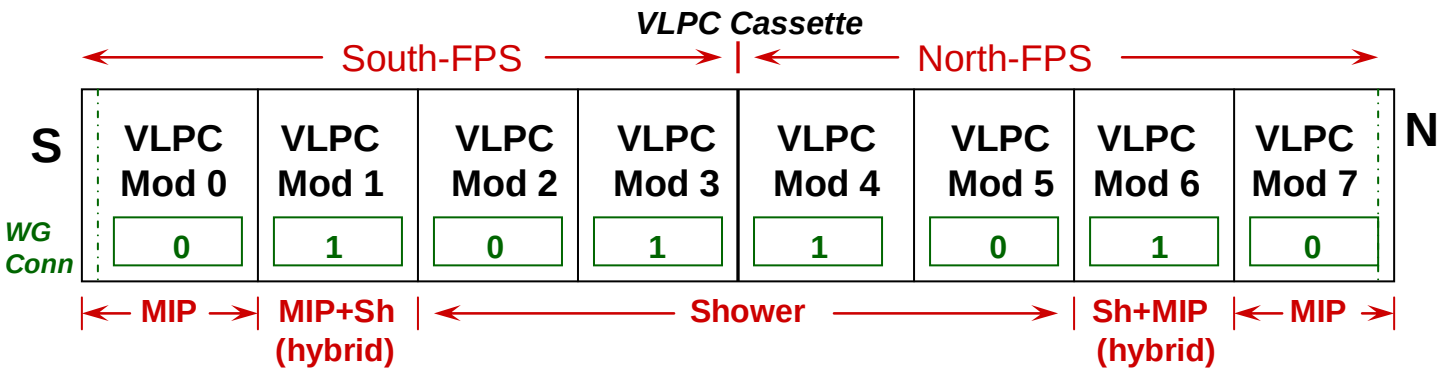
FPS Status

1/21/03 FTG Meeting, A. Patwa

- **Main FPS activity: understanding and resolving detector mapping issues; Include:**
  - SVX-id's (LHB, RHB): numbering and ordering
  - Strip-to-strip map onto VLPC modules
  - LED Map: LEDs to FPS detector-end connector's

- **Software Bug Fixes: (fps_examine, fps_unpdata/reco)**
  - SVX-id's – corrected in p12.04 and beyond
  - FPS strips in two shower wedges mapped correctly to hybrid VLPC module in p12.04 and beyond – *I.e.*, shared MIP-Shower module
  - Corrected numbering (strip 1 vs. strip 0) and ordering of fps strips onto VLPC module in p13.06
  - And all these corrected in p12.00 "local" version of fps_examine used by shifters (on the online machine)

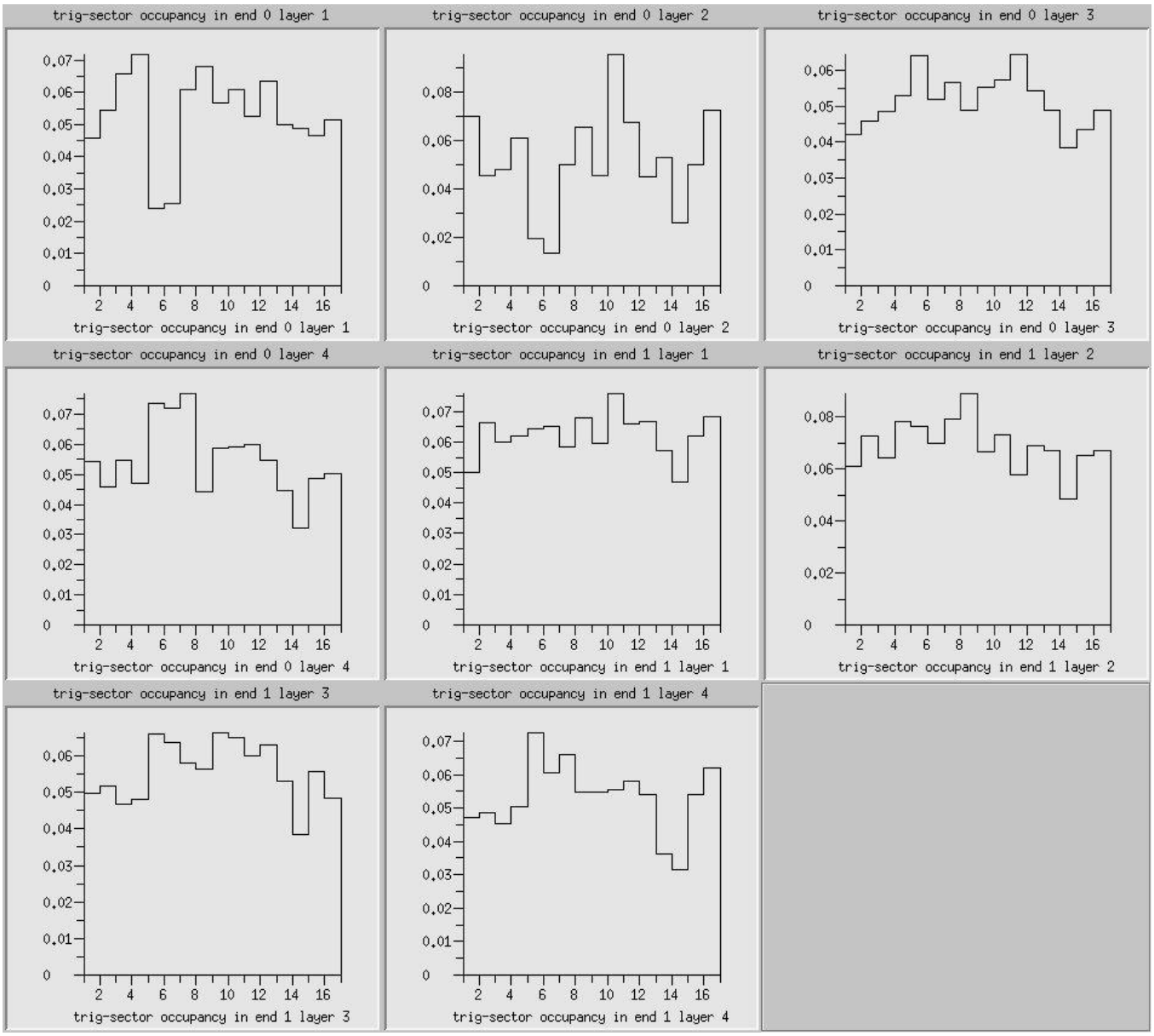
- **Hardware:**
  - AFE board – mounting of certain voltage dividing resistors that map to hybrid VLPC module (fixed)
  - Waveguide swaps – 9 waveguides in question
    - Effect observed in examine/reco for 9 FPS wedges
    - 6 on South, 3 on North



FPS Examine

- **Possible waveguide bundle swaps indicated:**
  - **Weak regions and dips in fps_examine**
  - **Holes in fps_reco/analyze**

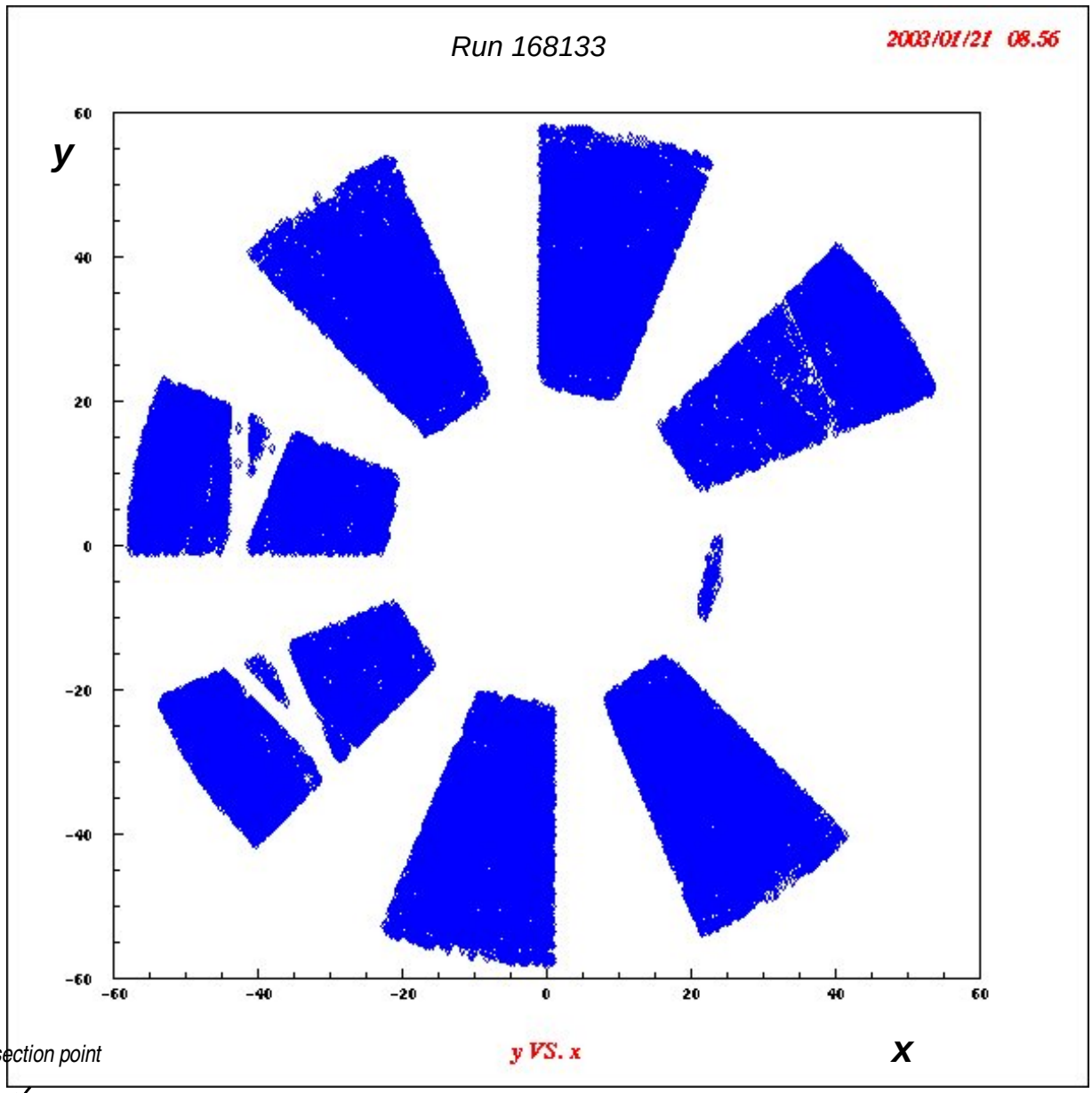
- **For e.g., Examine's Occupancy distributions for each FPS trigger-sector**

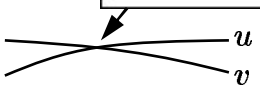


FPS Reco/Analyze

- **Possible waveguide bundle swaps indicated:**
  - **Weak regions and dips in fps_examine**
  - **Holes in fps_reco/analyze**

- **FPS reco/analyze: *y vs. x* distribution for *u*-*v* cluster matches within a wedge**





FPS-South, MIP layer 1 of 2

FPS Status (cont.)

- For all 9 waveguides
  - VLPC-end: waveguides routed and hooked-up according to installed labels
  - Last week, FPS detector-end: waveguide pigtails route and hook-up according to installed labels

- PDAQ studies: LED pulsing on 9 wedges indicates swaps in the waveguide
- Access in the ICR gap: check LED map
- Waveguides:
  - In 8 out of 9 guides, "equivalent" to swap at cassette-end where waveguide branch '0' swapped with branch '1' for VLPC modules 0, 1 (South) and 6, 7 (North)

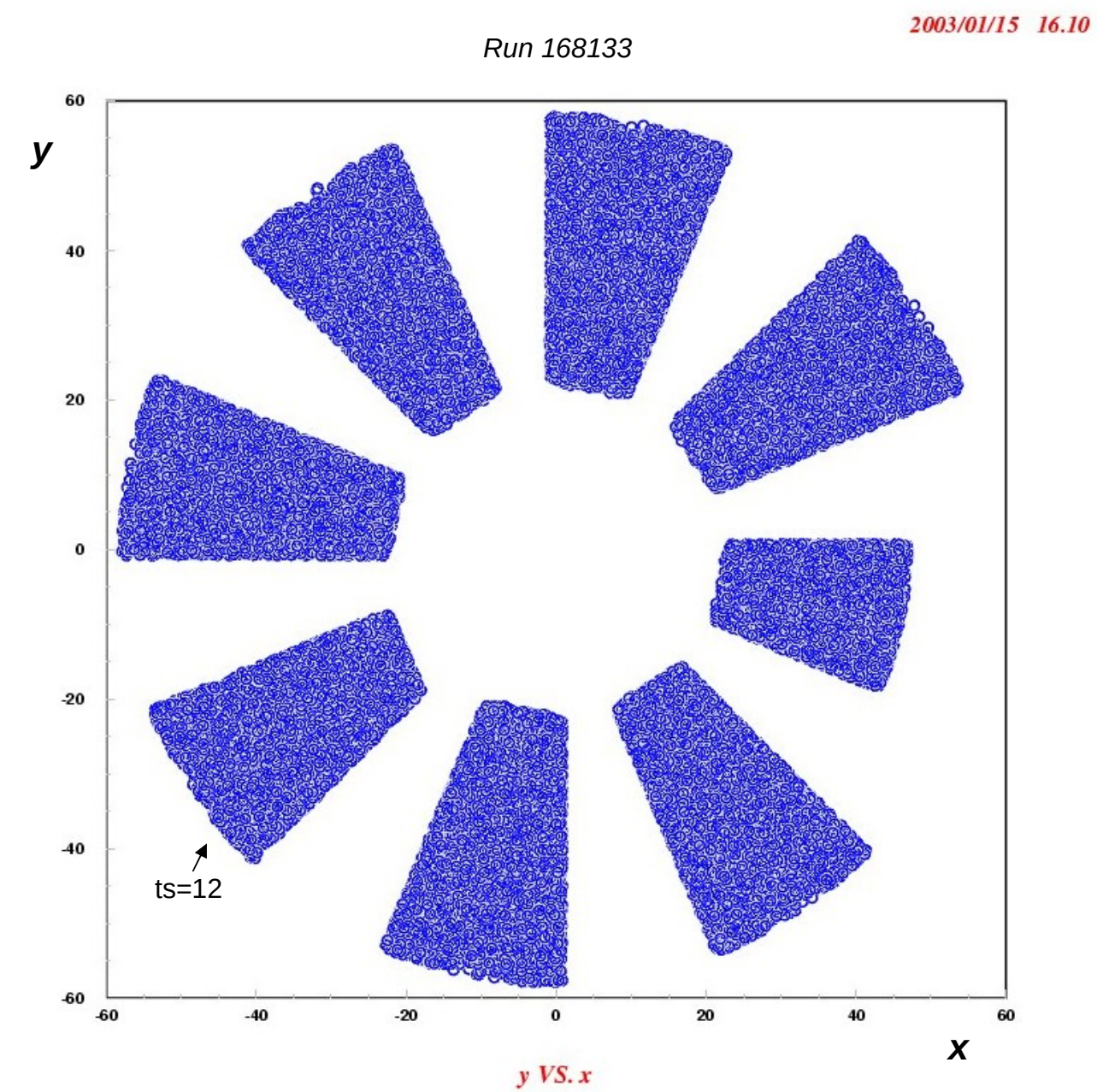
  - In 9th (≡ fps-south, ts = 12), also "equivalent" to swap at cassette-end... plus *v*-layer connectors at detector-end *(maybe)* "offset" by one connector
  - Gap Access: for 9th, LED electrical connector for *v*-layer incorrectly seated on LED board at detector-end
    - results in incorrect LED map and the apparent "offset"
    - Connection corrected this past Sunday

  - Aim: fix all 9 guide connections at cassette-end

- Other Issues:
  - Incorporating swaps in examine/reco maps: FPS-South ts=12 seems to still have hole in strips *v*1-*v*8
  - Correct connector polarity on remainder of LED electrical cables at pulser-board end (west platform)

FPS Reco/Analyze, ts=12 South

- **FPS reco/analyze: *y vs. x* distribution for *u-v* cluster matches within a wedge**
- **FPS-South ts=12, after software fixes that account for waveguide swaps**



FPS-South, MIP layer 1 of 2

Items to Address

- **To-do List:**
  - **Final inspection on FPS before ECs close**
  - **Pulse LEDs after waveguide fixes using VLPCs**
  - **Get correct map into fps_examine, unpdata for any hardware fixes**
    - **This should be the map originally developed for FPS**
    - **Post-shutdown data**
  - **Pre-shutdown data, final map needed to reflect "as-is" waveguide installation**
    - **Most of it already there except for fps-south ts=12**
  - **fps_reco/analyze: still need tracking or calorimeter matching capability**
  - **...**