Detector assembling procedure

Y. Doi

February 4, 1999

1 First week: preparation

- Cut out electrode-film as the size of a cavity-plate. Make holes for bolts and knocking-pins.
- Stick the film to the cavity-plate by electro-conductive adhesive → stiffen the adhesive by heating
- Stick chip-resistors to the film by the adhesive → heating
- Fix the resistors by stycast.

2 Second week: fixing the detector chips

Distribute the Ge:Ga chips using a chip-bonder. Fix the chips by electro-conductive adhesive and stiffen the adhesive by heating.

3 Second week – third week: assembling

- Solder wires to the electrode-film.
- Fix the soldering by stycast.
- Assemble the stressing spring: stack 47×2 conical springs inside a teflon tube, make four sets.
- Assemble the cavity-plates with the detector housing, align the plates by knocking pins.
- Solder the wires to MDM connectors.
- Fix the soldering by stycast.
- Assemble the detector block and the connectors with a support block.

4 Fourth week – sixth week: stress and test the detector

- Stress the detector chips, close the cryostat.
- Pumping
- Test the following items
  - I-V curve
  - Spectral response
  - AC response
  - Noise
- Warm-up and open the cryostat

Repeat these procedures for 3 to 4 times.

5 Seventh week: dark test, etc.

- Measure dark current and noise.
- Measure feedback resistance @ 2K.