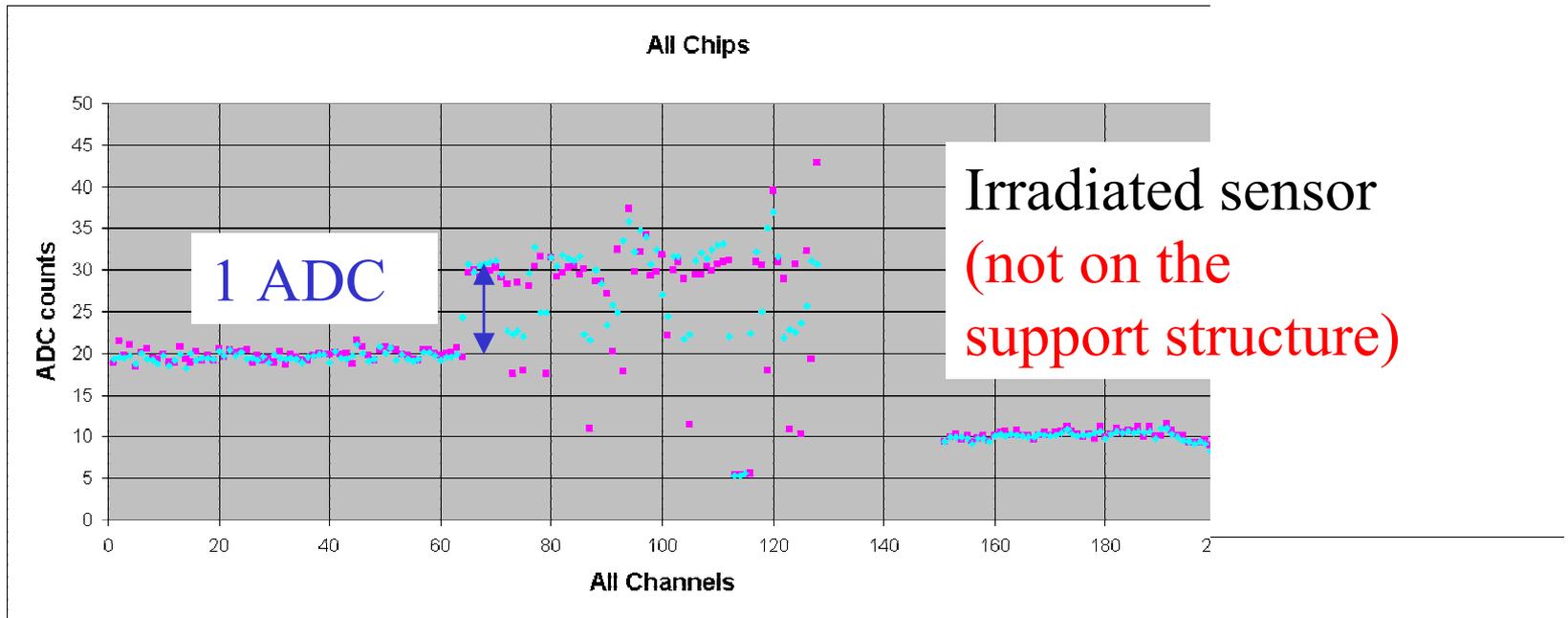
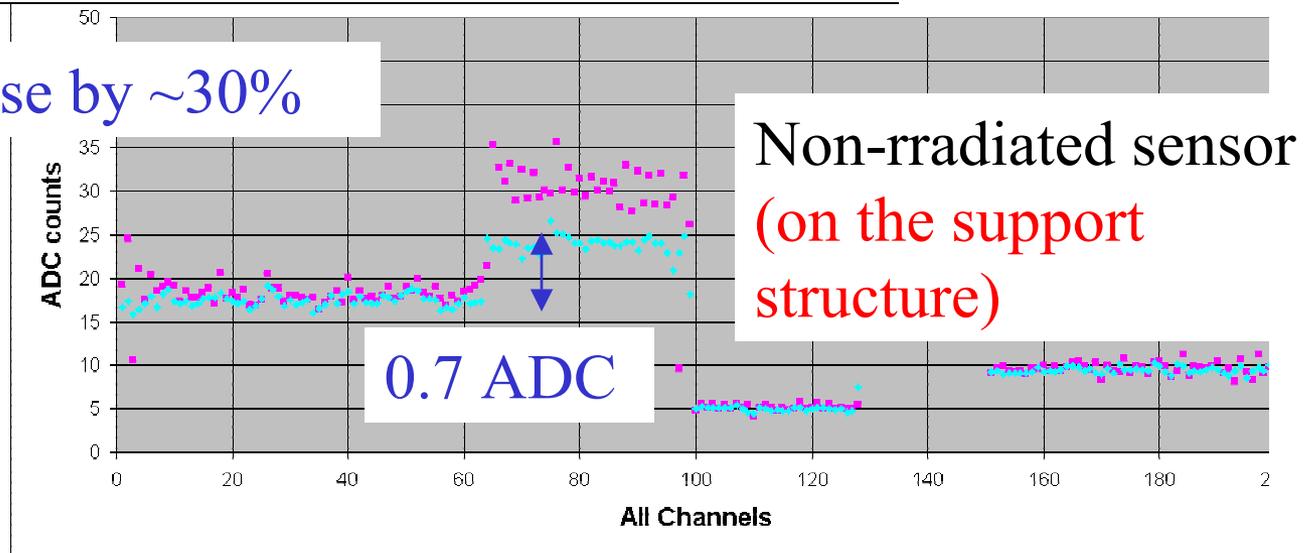


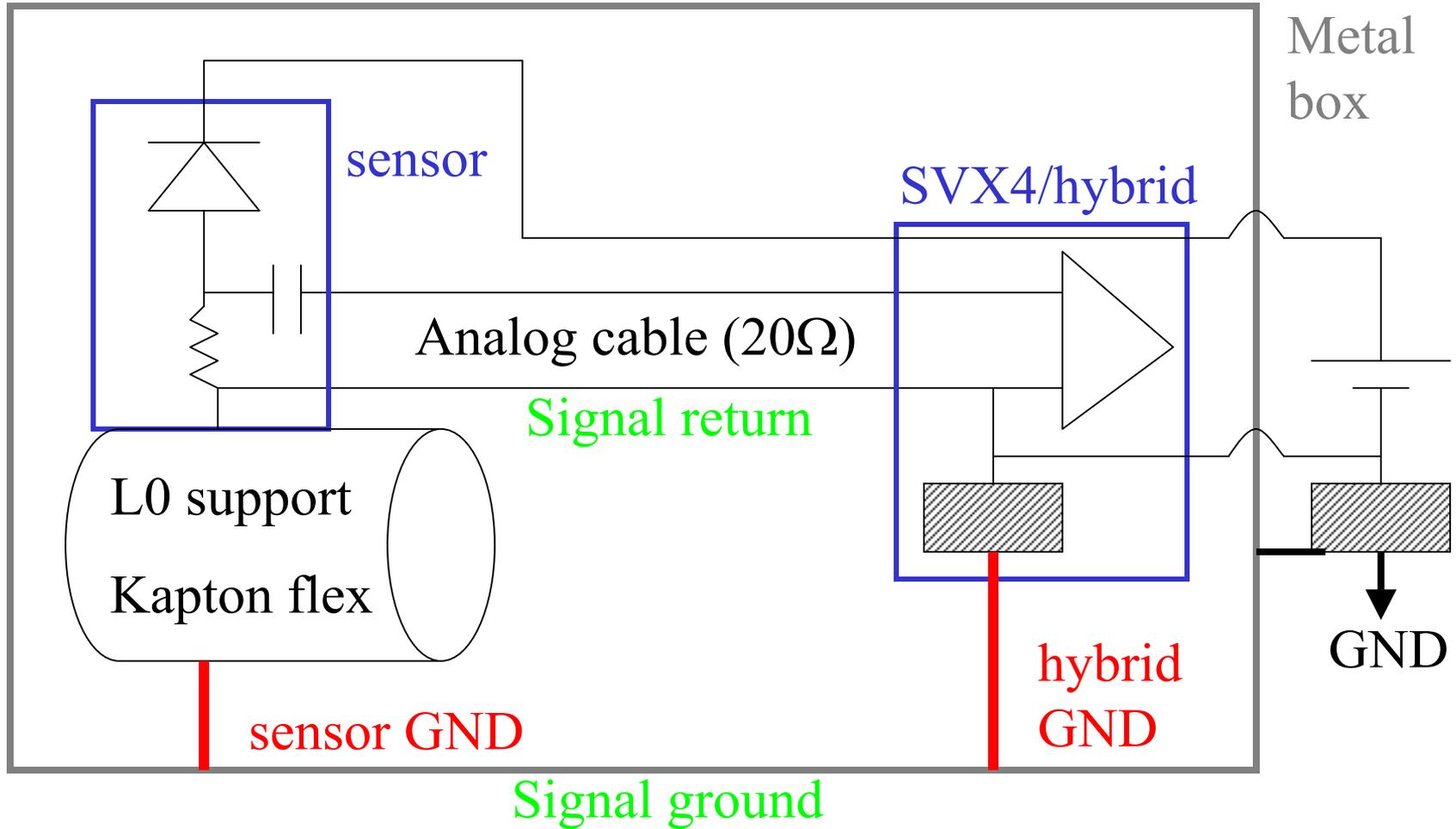
# Irradiated sensor



Noise increase by  $\sim 30\%$



# Equivalent (?) circuit



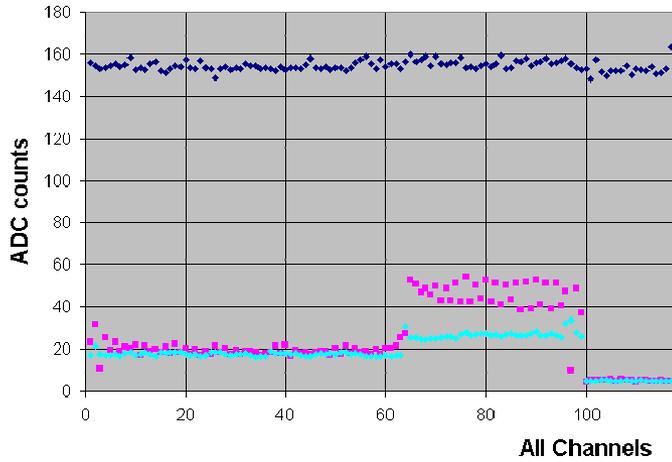
Least impedance = least inductance  
for high frequency (not resistance).

# Effect of Grounding

Structure inside the aluminum box.

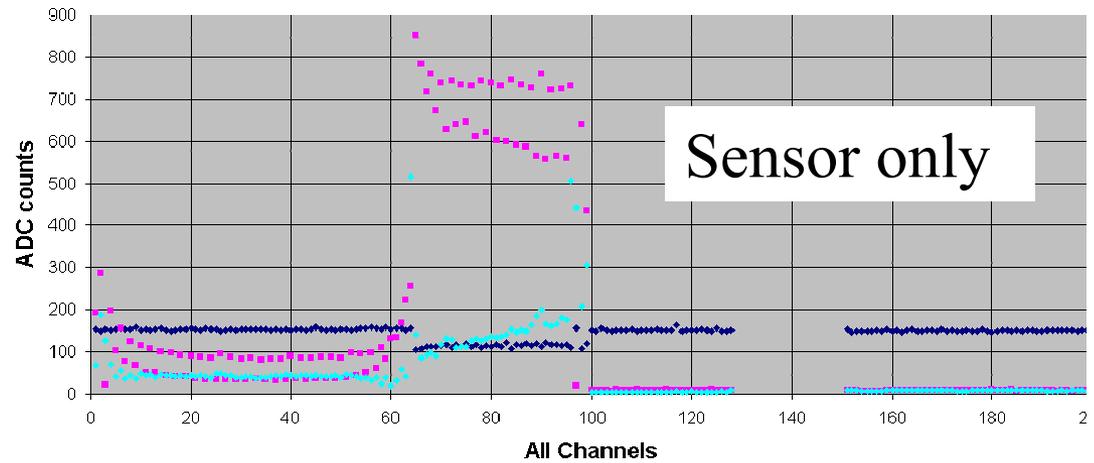
All Chips

Hybrid only



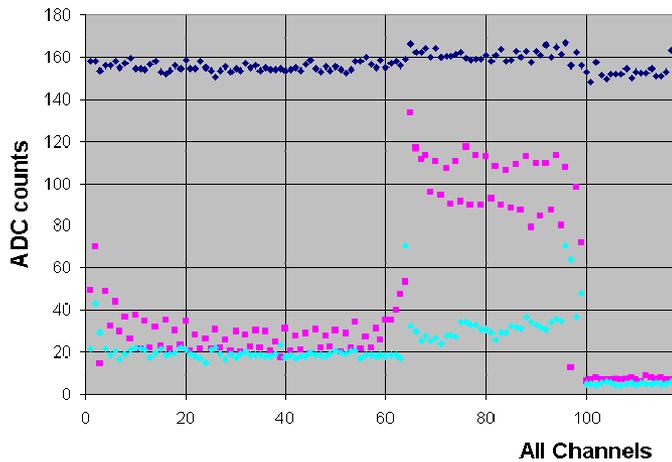
All Chips

Sensor only



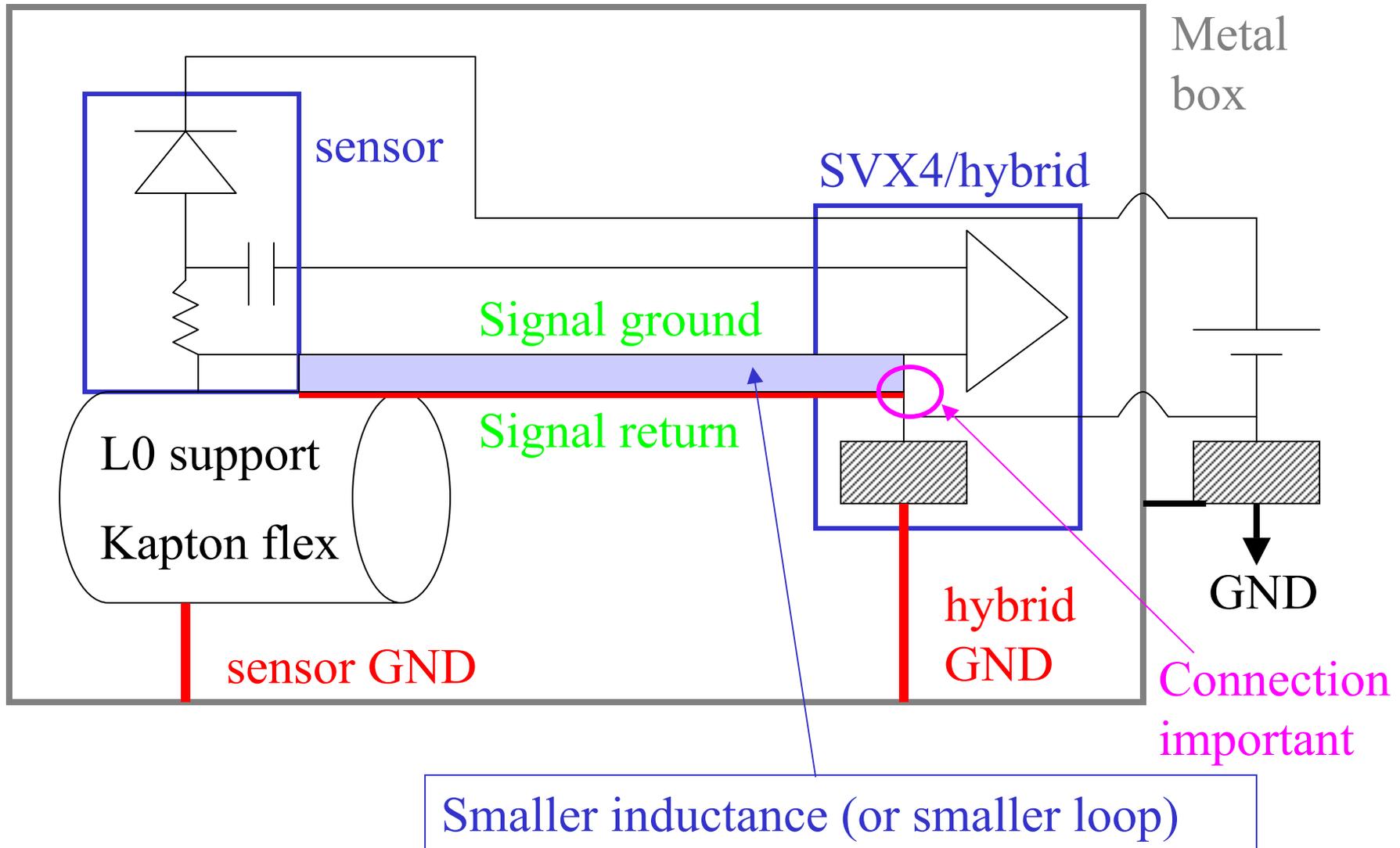
All Chips

Both hybrid and sensor

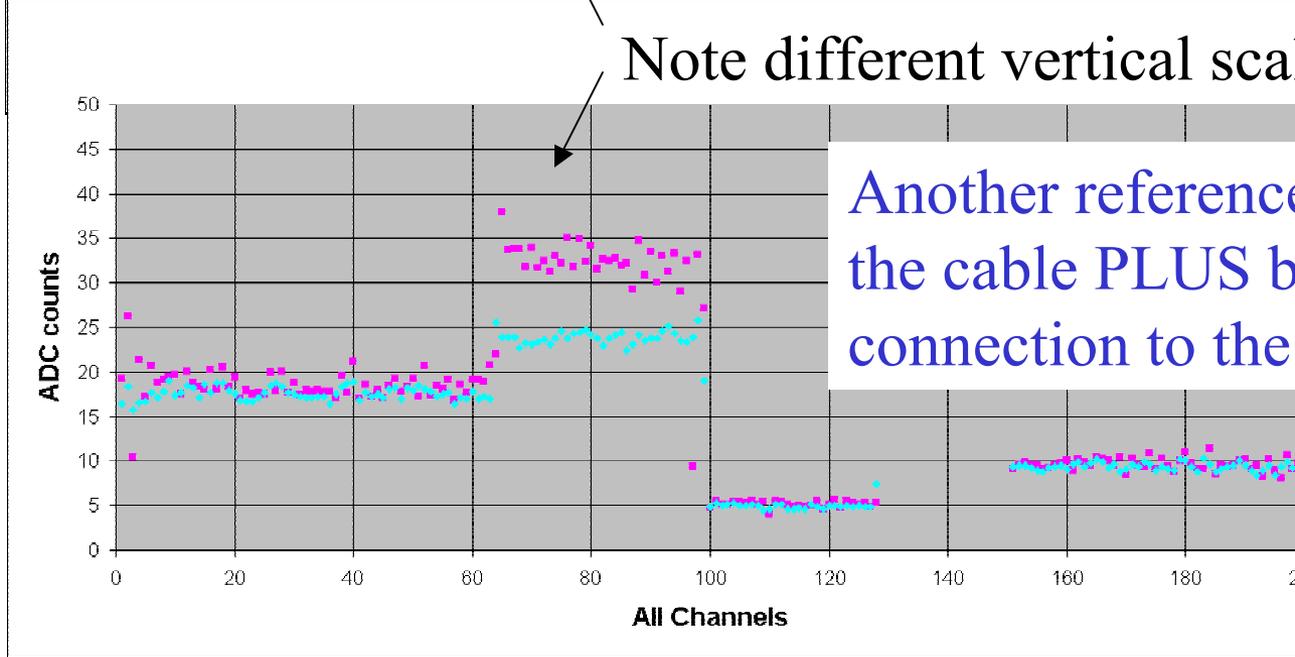
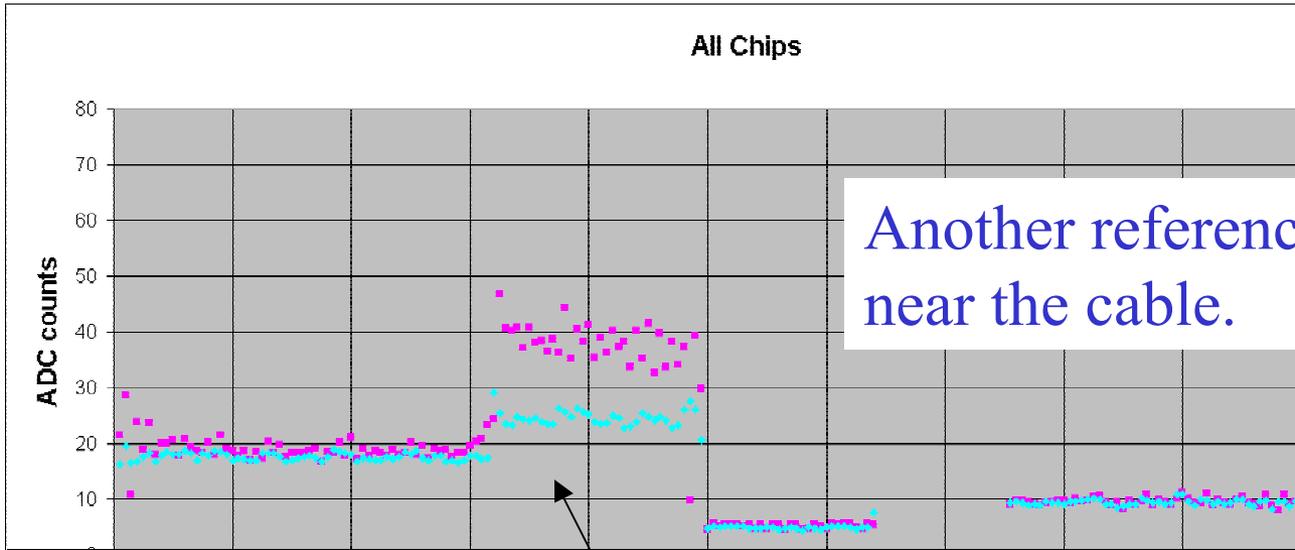


- Grounding hybrid end (only) seems better.

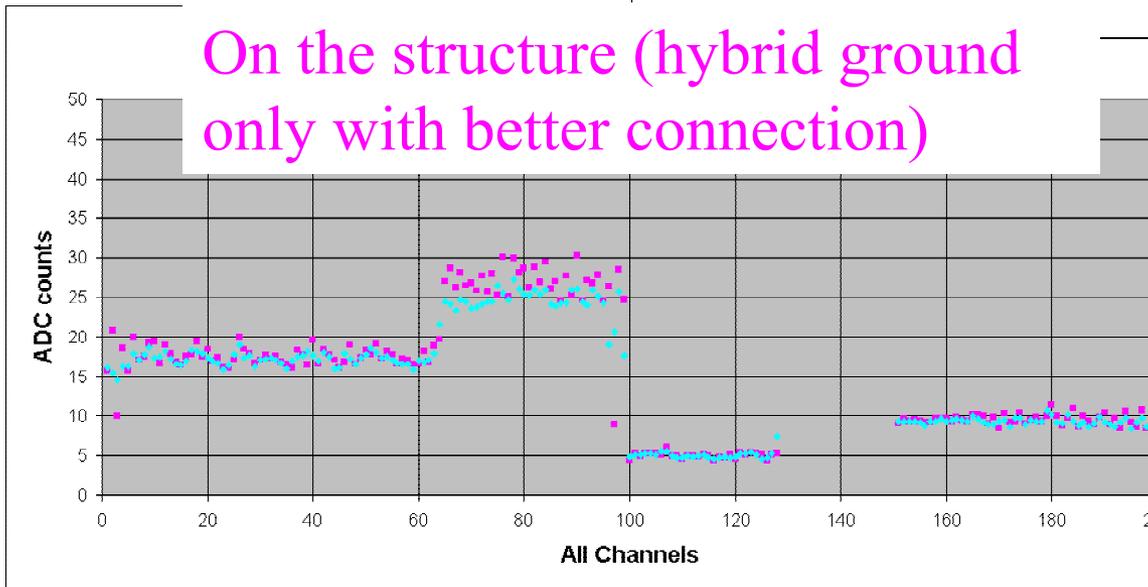
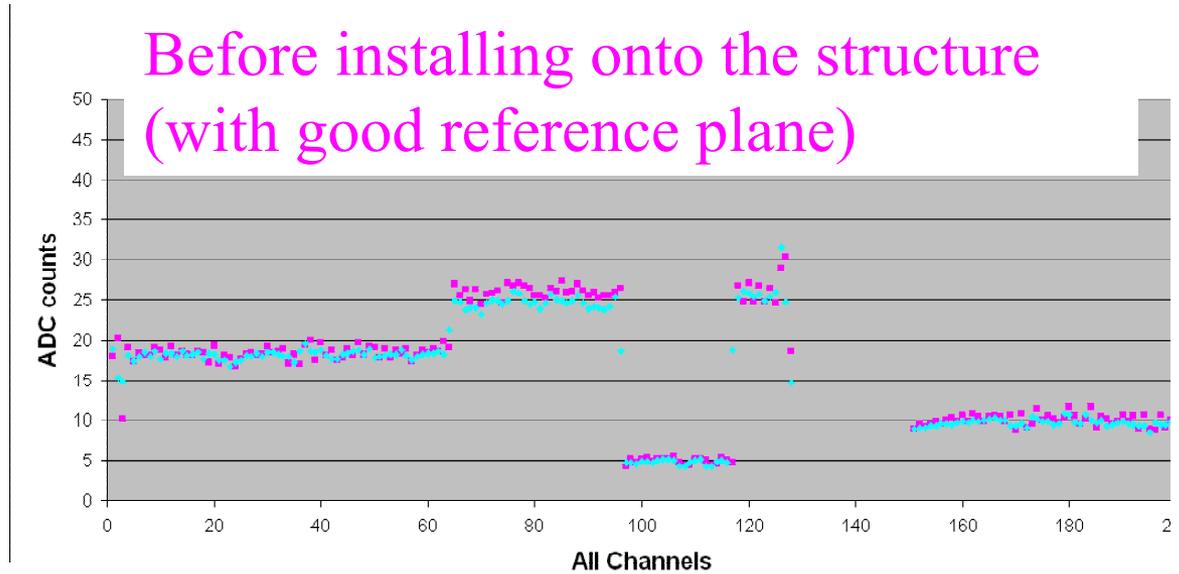
# Equivalent (?) circuit (cont'd)



# Extra GND connection btwn sensor and hybrid



# cf. best noise performance



## Summary

- Need to reduce ground loop
  - ➔ Need continuous well grounded reference plane close to the analog cable (but with enough space to avoid capacitive coupling).
- L0 support and hybrid support must be electrically tied together.
- Will test if the copper embedded Kapton flex serves this function.
- Must avoid any small ground loop.
  - ➔ shorten (widen) the cable/wire length (width) for the ground connection at the hybrid end.