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# Some thoughts on grounding/shielding

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# Nominal grounding plan

- Magnet, steel, support structure on “building ground”
- Electronics all on “detector ground”
  - i.e. electrically isolated from building
- Module light cases are built from alumin(i)um, and are functionally impossible to isolate from steel, so these are on building ground
- I have 2 concerns. People should tell me whether they’re real concerns



# Concern #1 “floating module”

- Modules are attached to one another with epoxy
- It's possible for a module to wind up completely isolated from the others, and the support structure
- It's possible for that single module to not touch the steel
- This would lead to a large amount of metal on a floating ground, with potentially flaky electrical connections



# Solution #1

- Assuming we're concerned about this...
- At *cassette construction*, form good electrical connections between modules (and test as part of QA/QC)
- At cassette *installation*, form a good connection between one module and the support structure



# Concern #2 proximity

- SiPMs are external to modules, but internal to cassette frame
- Signals pass through metal on a different ground
- Is the shielding sufficient?
- I don't know the answer to this

