

# **Backgrounds We Shouldn't Forget**

# Instrumental Backgrounds

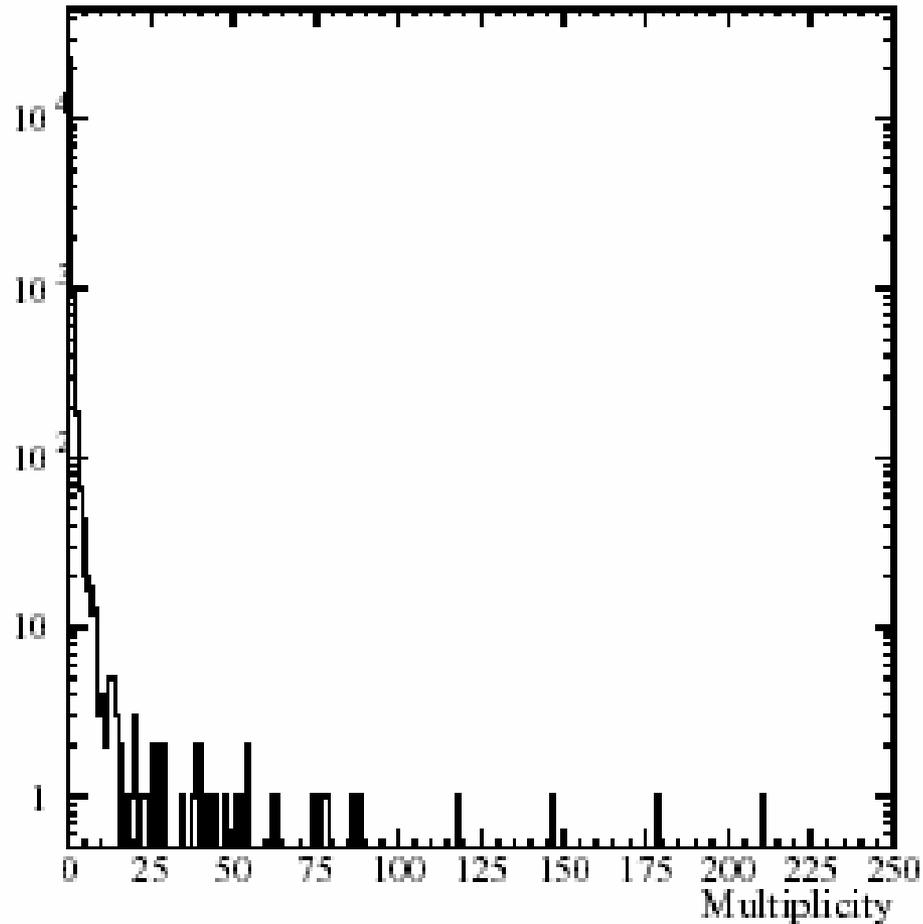
Types:

- Flasher PMTs
- Static discharge
- Electrical noise
- Triboluminescence?

Very detector-dependent (many in SNO, “zero” in KamLAND)

*Best approach is to minimize number through design*

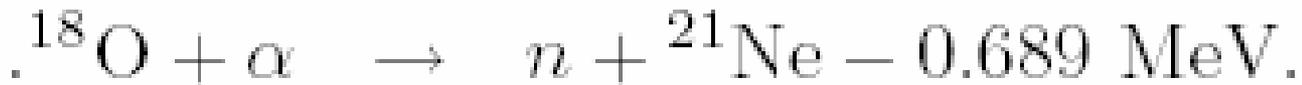
# Multiple Neutrons from Cosmics



*Use vetoed multiplicity to fit leakage into unvetoed, window?*

# Nuclear Processes

( $\alpha,n$ ) processes in acrylic



*Reaction on C can also produce  $e^+e^-$  pairs in coincidence*

Sources: U and Th chains but also 'implanted' Po from Rn attached to container surfaces.

Build-up depends on local static environment, Rn levels, and exposure.

# Nuclear Processes

Spontaneous fission: U small, need to be careful with Cf

# Atmospheric Neutrinos

Rate in small detector is tiny, but background will not likely be removed.