

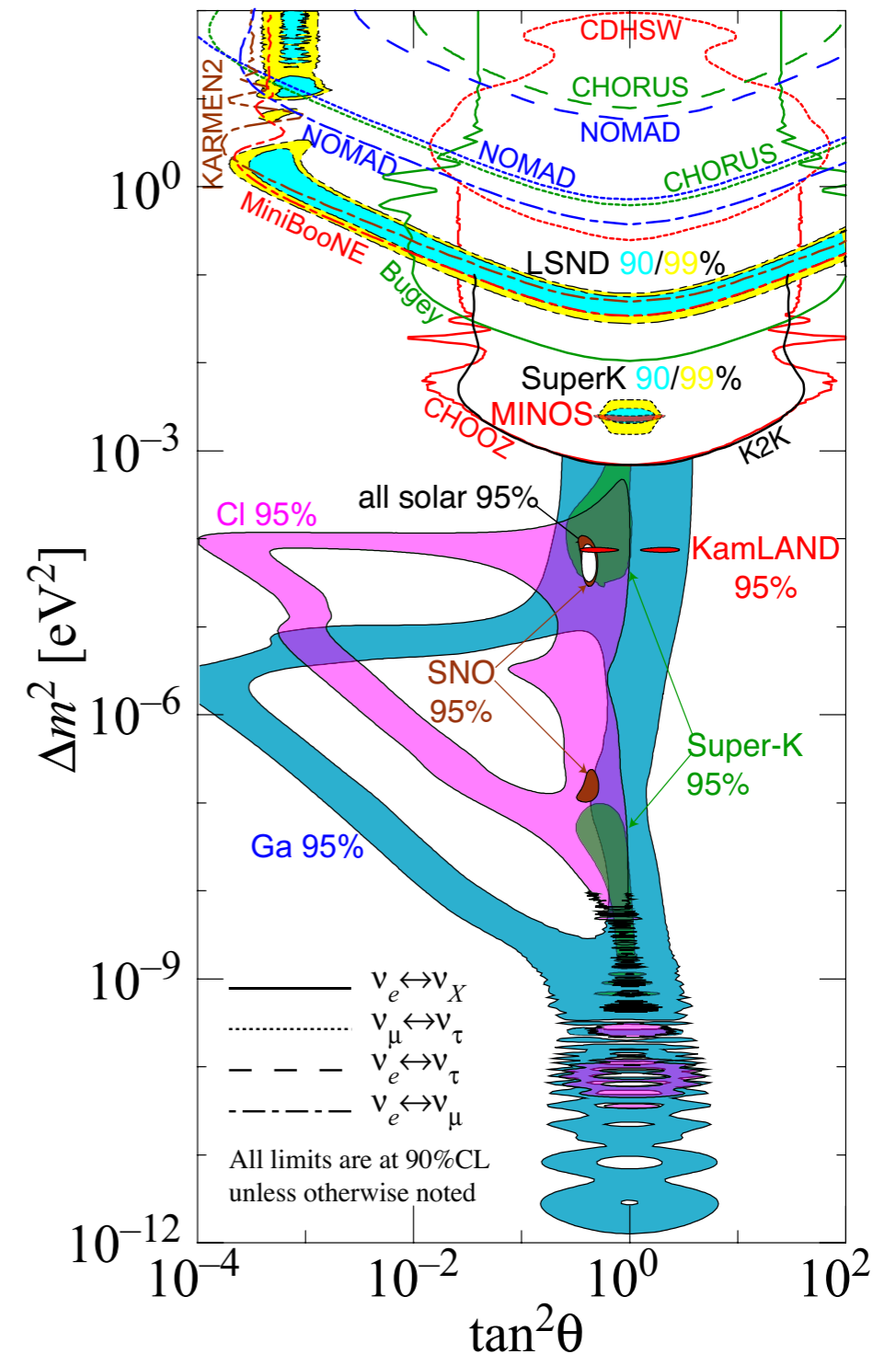
Current Status of MicroBooNE

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Laboratorium für Hochenergiephysik

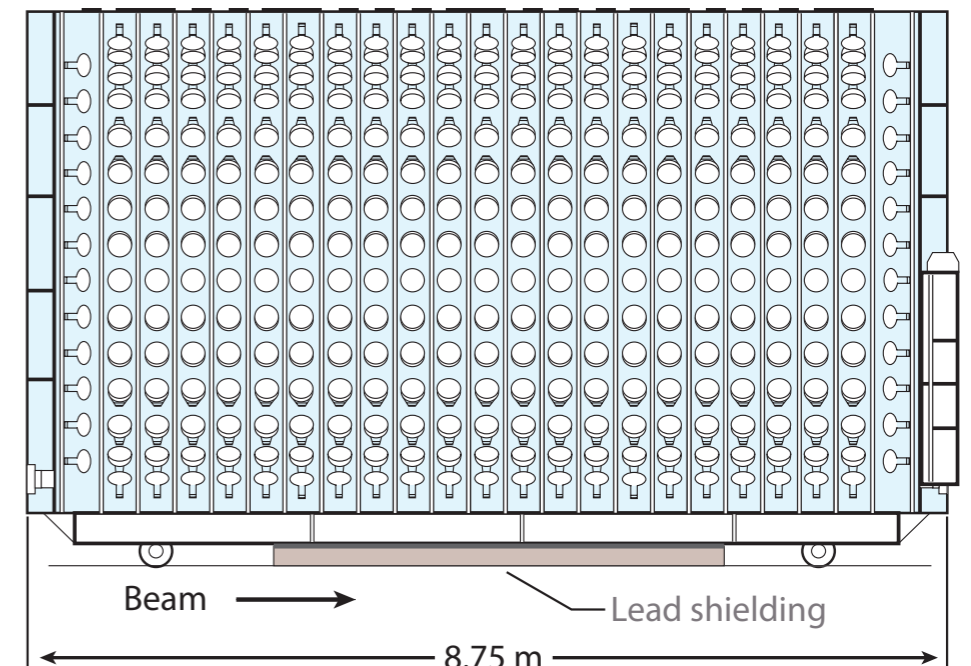
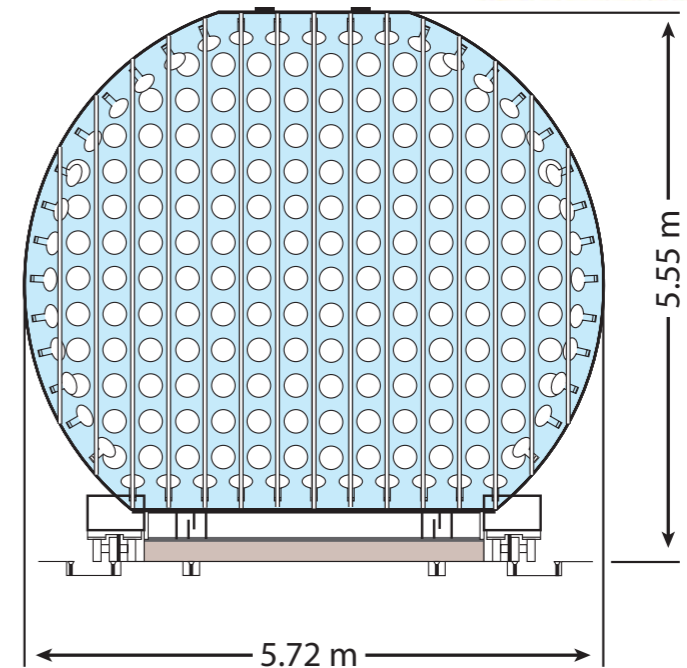
I. LSND and MiniBooNE Anomaly

- 3-Neutrino Mixing is well determined
- Still LSND & MiniBooNE regions remain



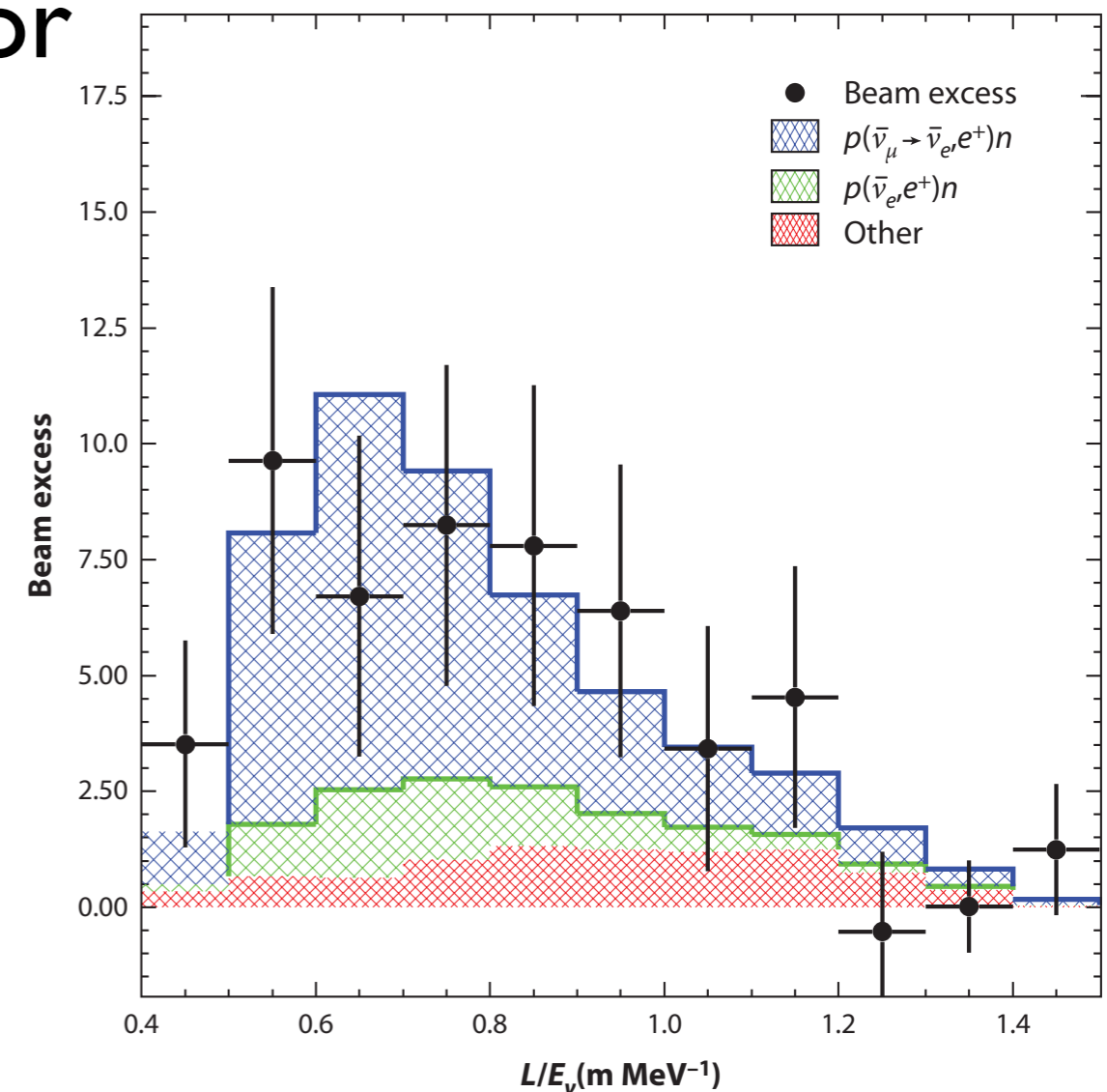
I. LSND and MiniBooNE Anomaly

- A liquid scintillator detector
- Short-baseline (30m from source)
- only NC events
- Found excess signal at low L/E



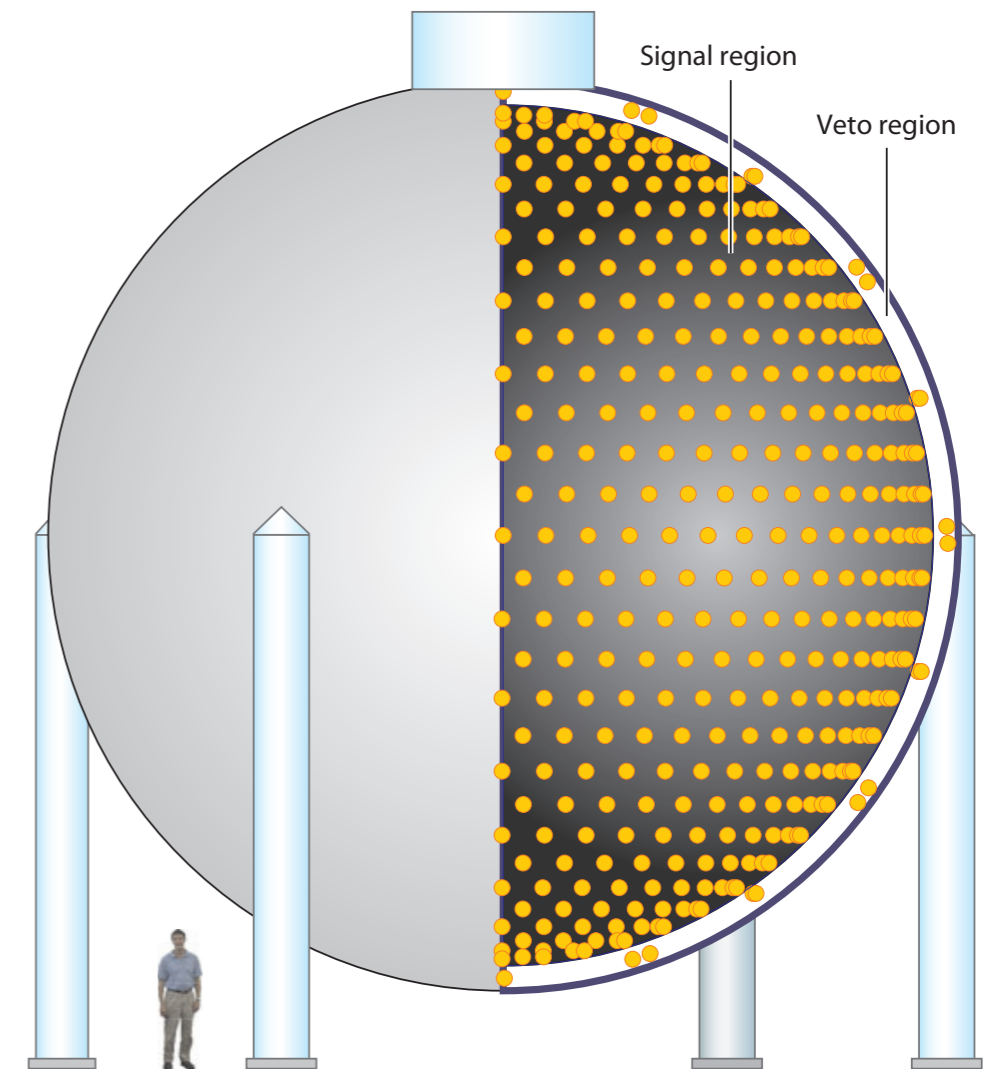
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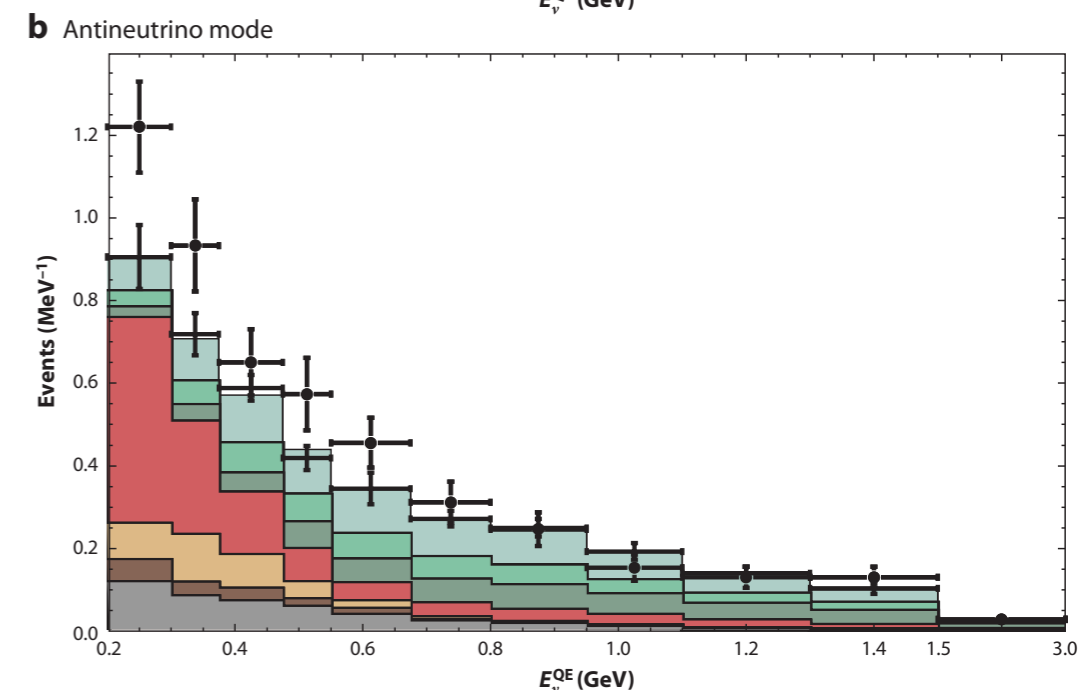
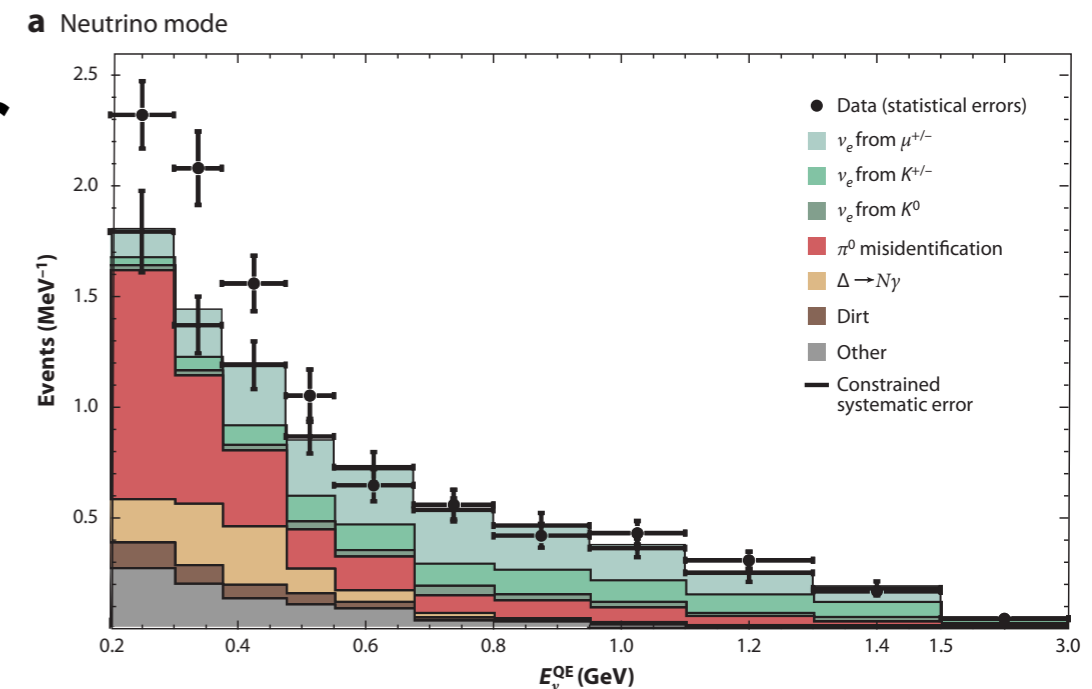
I. LSND and MiniBooNE Anomaly

- A liquid scintillator detector
- Short-baseline (541 m from source)
- NC / CC events
- Found excess signal at low L/E



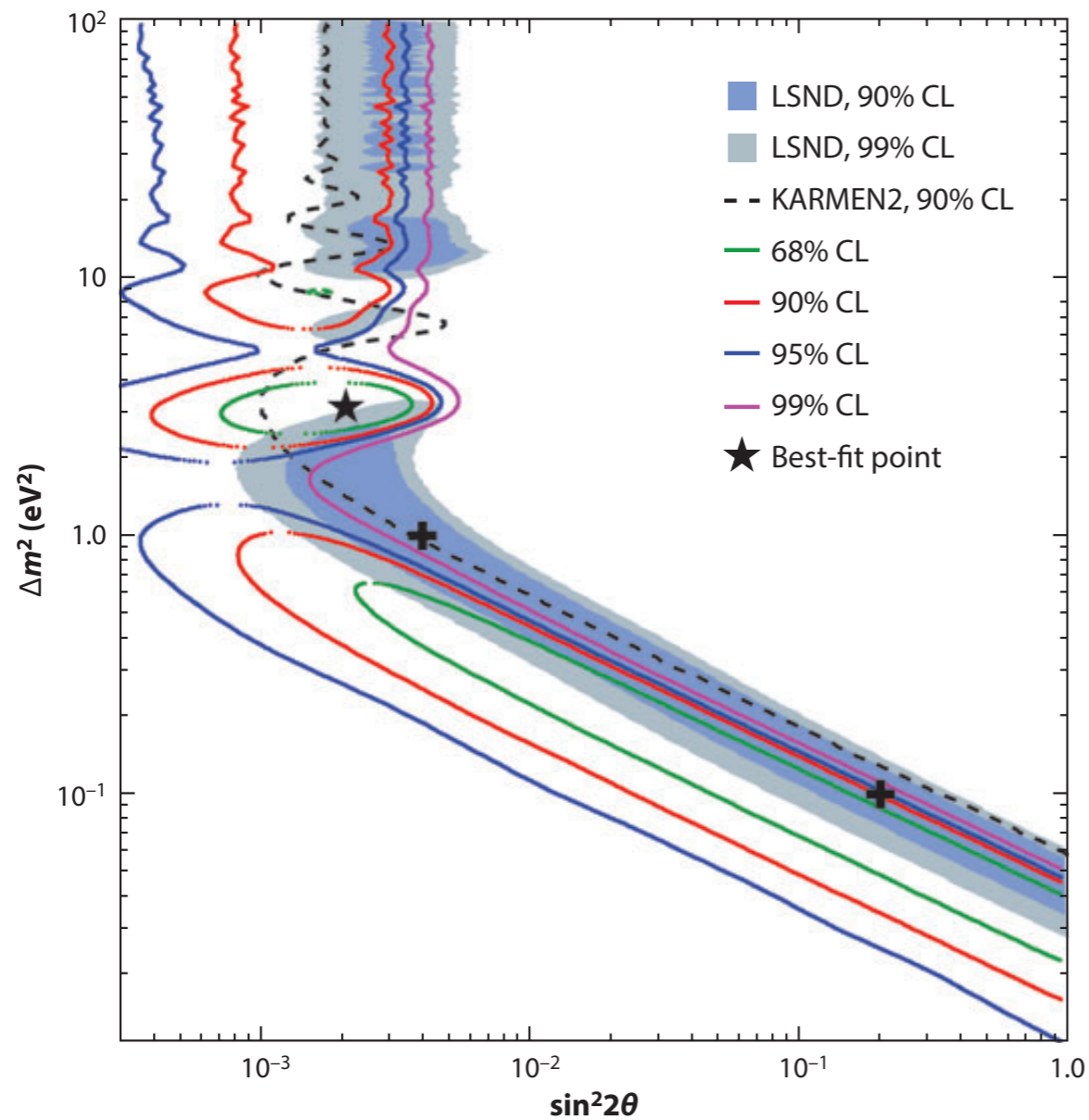
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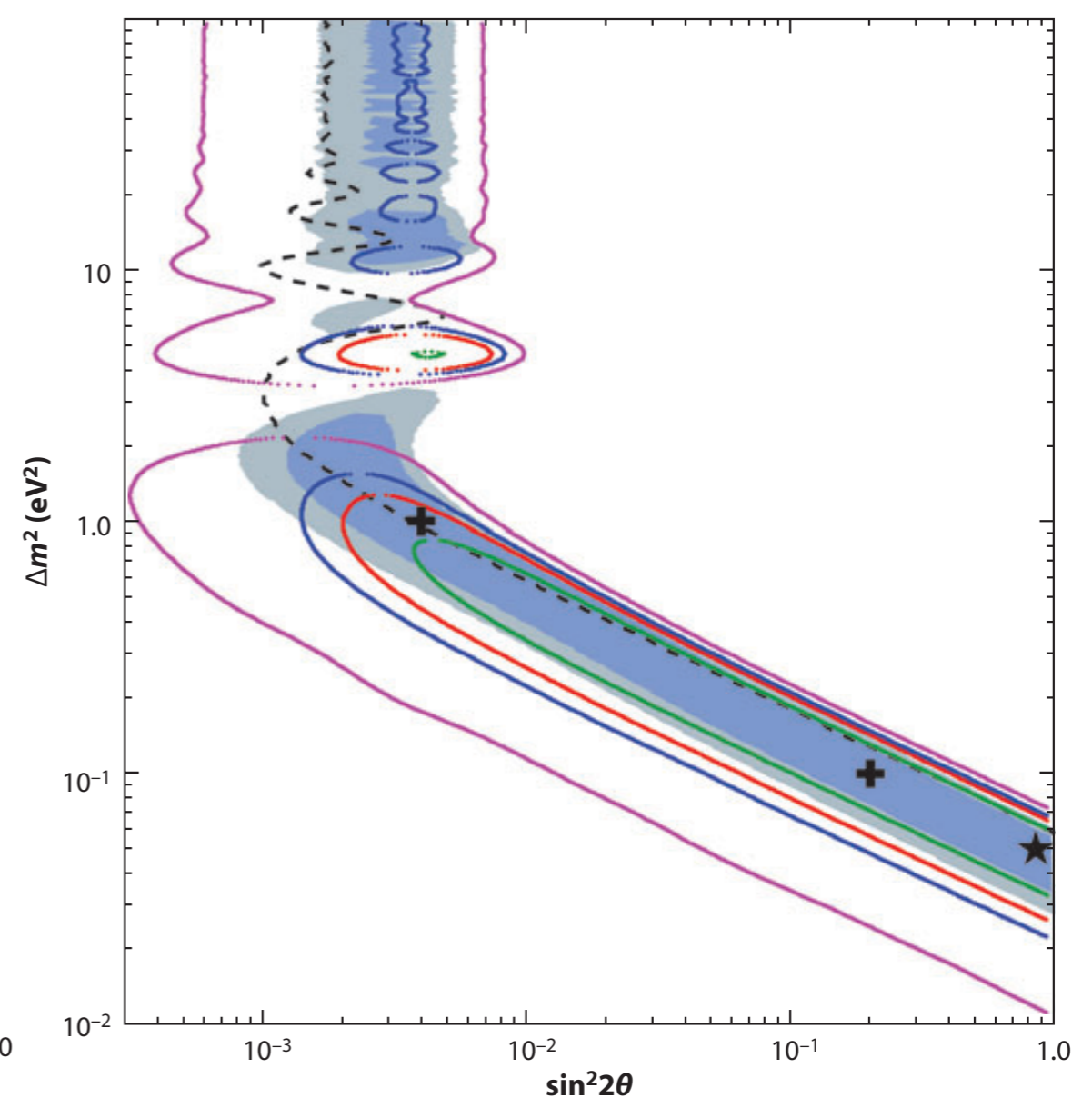


I. LSND and MiniBooNE Anomaly

Neutrino



Antineutrino

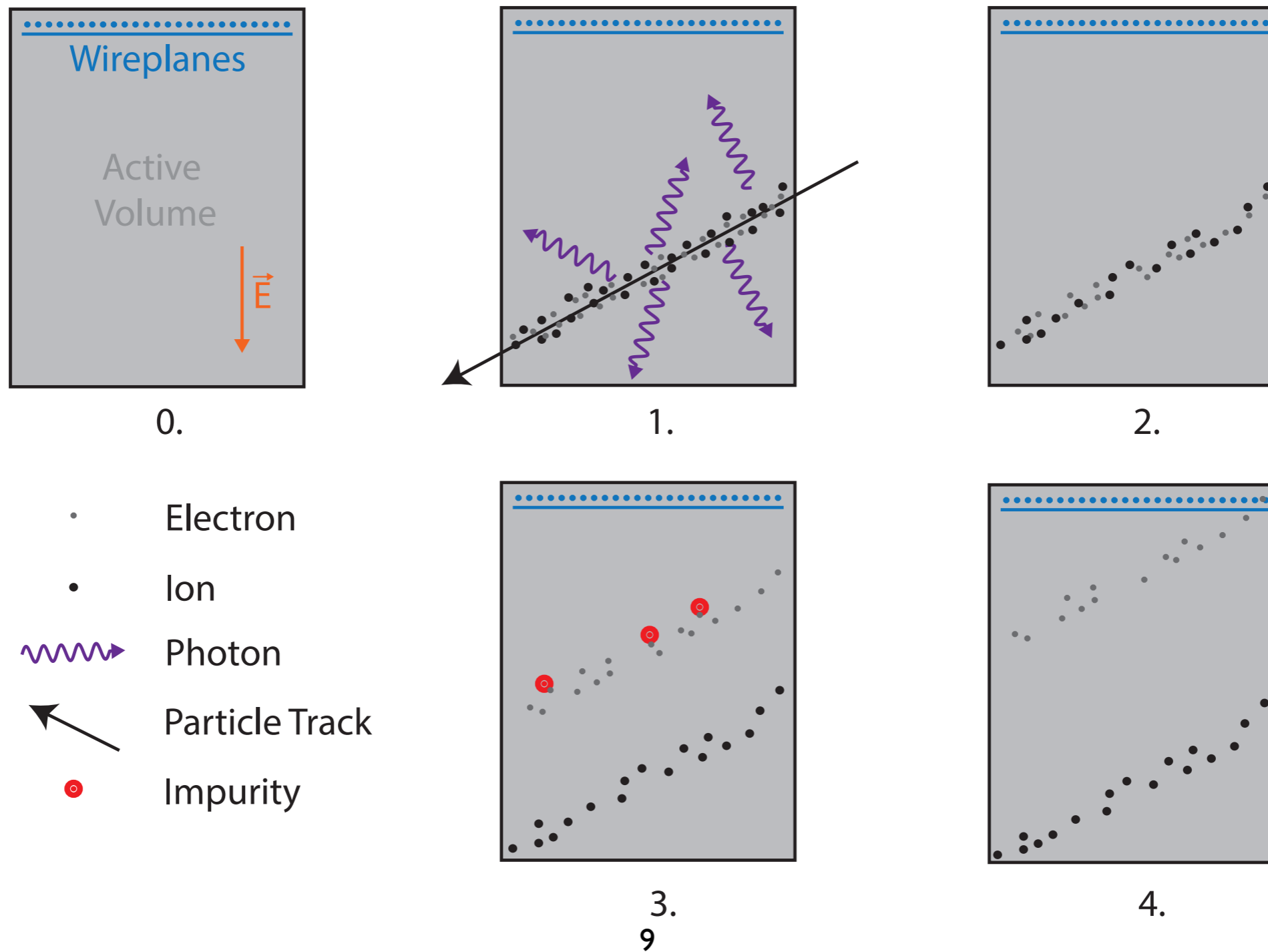


2. Liquid Argon TPC Principles

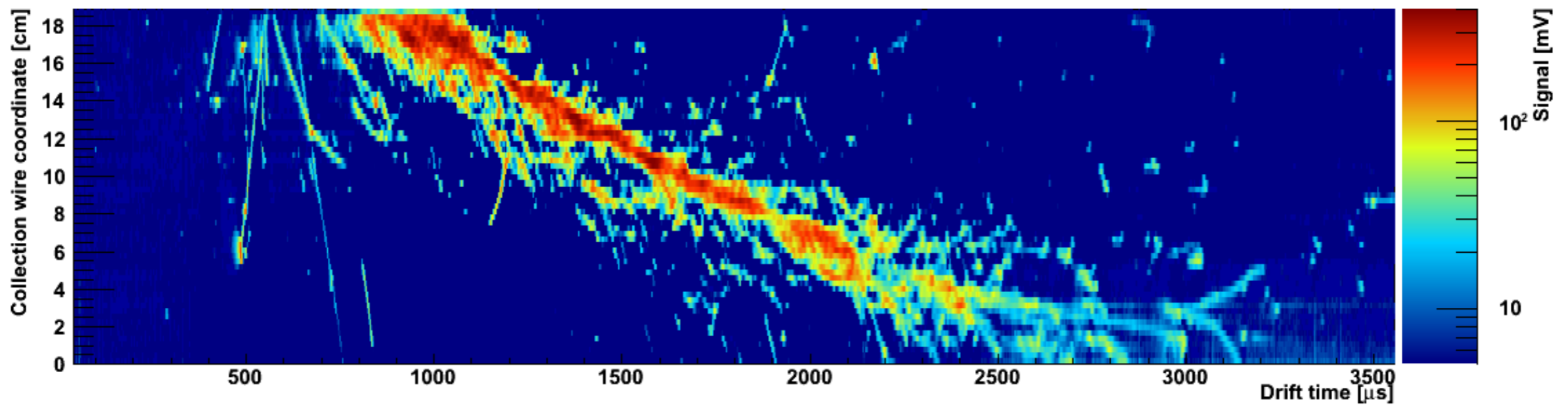
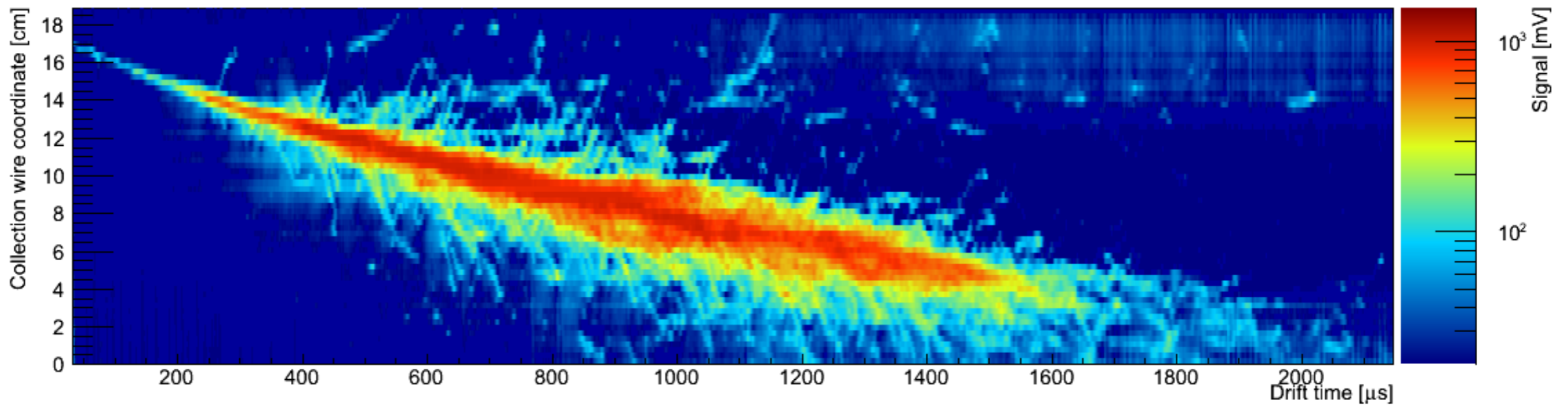
Why liquid argon?

- Dense (1.4 g/cm^3)
- Abundant (1% of the atmosphere)
- Ionization yield of 5500 e/mm for a MIP
- Prompt Scintillation (ns)
- Liquid at 87K

2. Liquid Argon TPC Principles

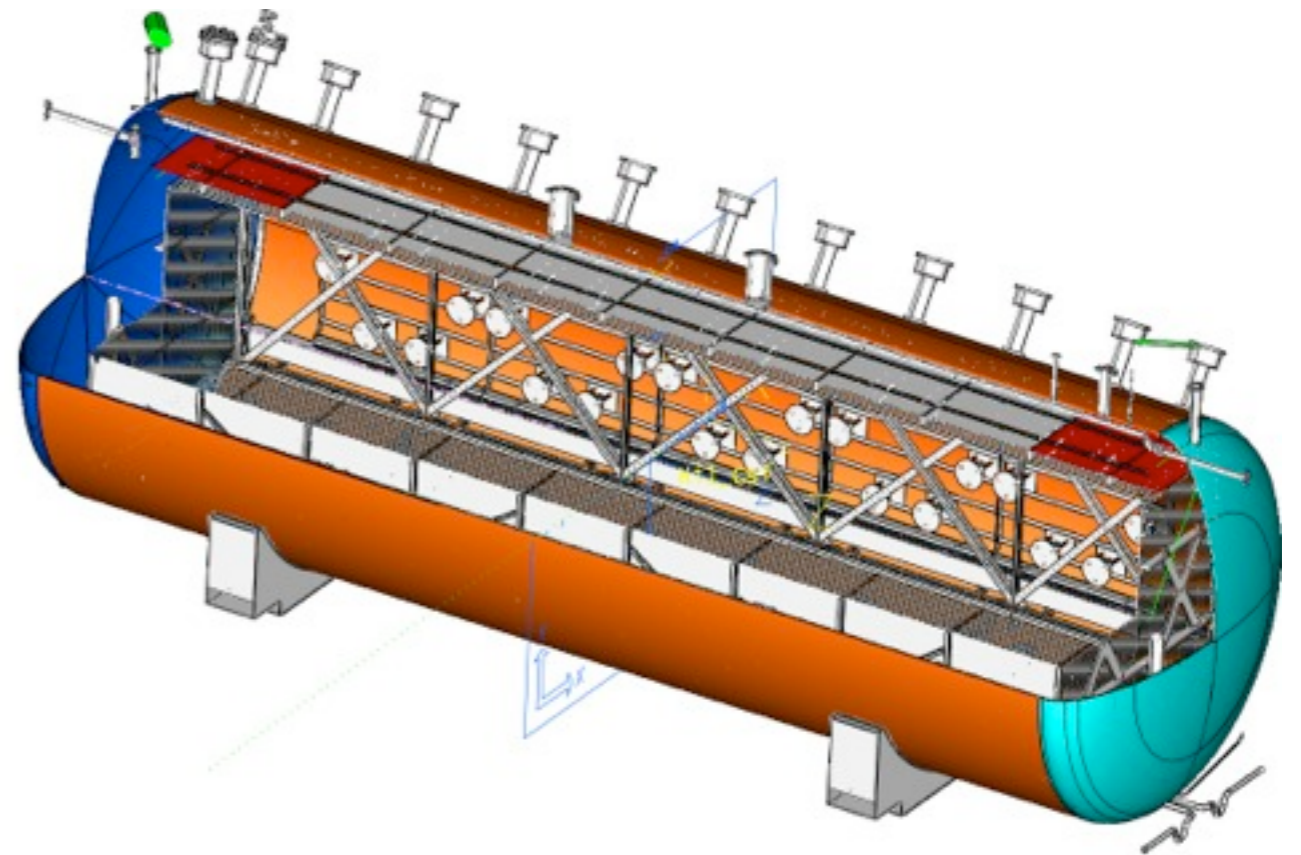


2. Liquid Argon TPC Principles



3. The MicroBooNE Detector

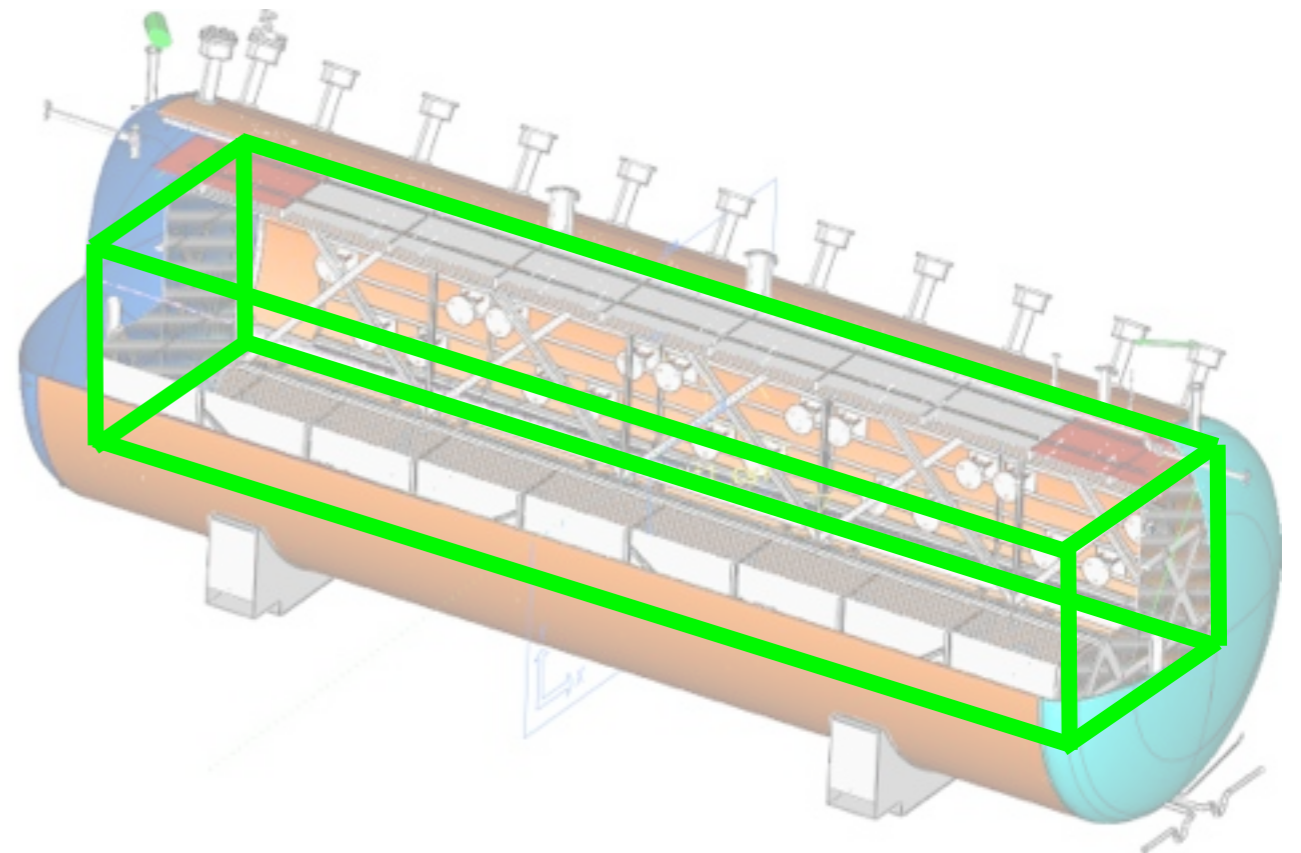
- 2.5m x 2.3m x 10.2m liquid Argon TPC
- 60t fiducial volume
- 2.5m drift length
- 3 wire planes $0^\circ \pm 60^\circ$
- 3mm wire pitch
- 36 8" Photomultipliers
- Located in the BNB at Fermilab





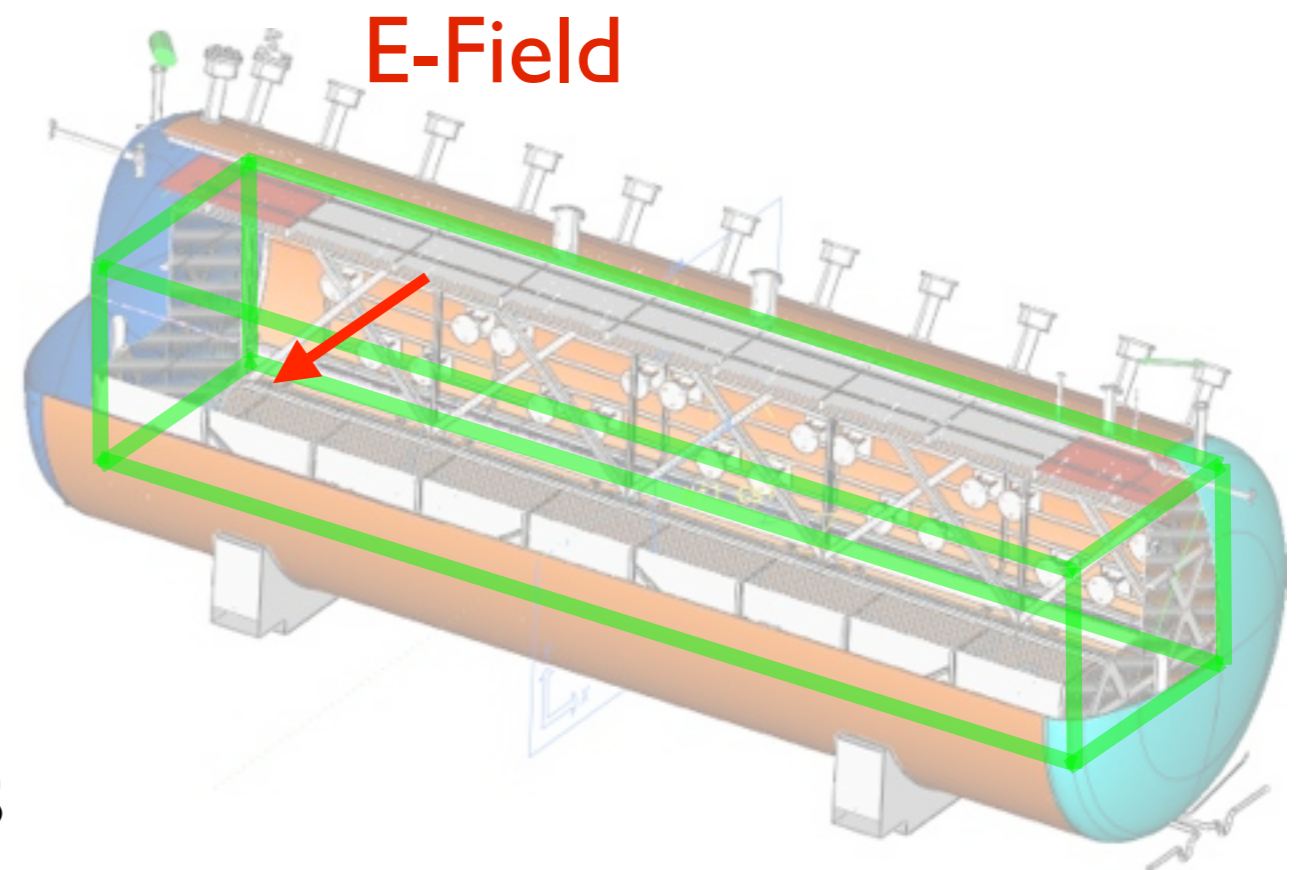
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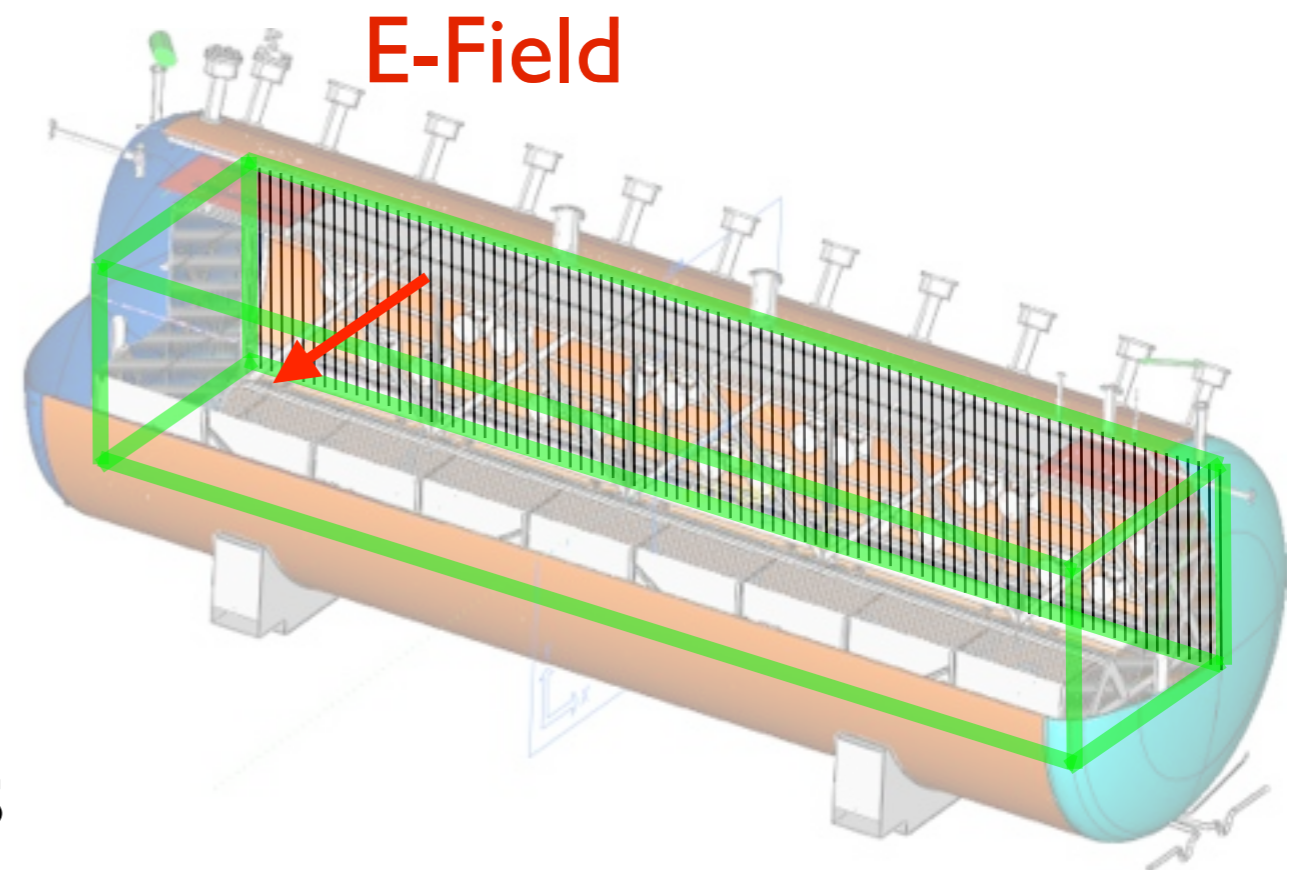
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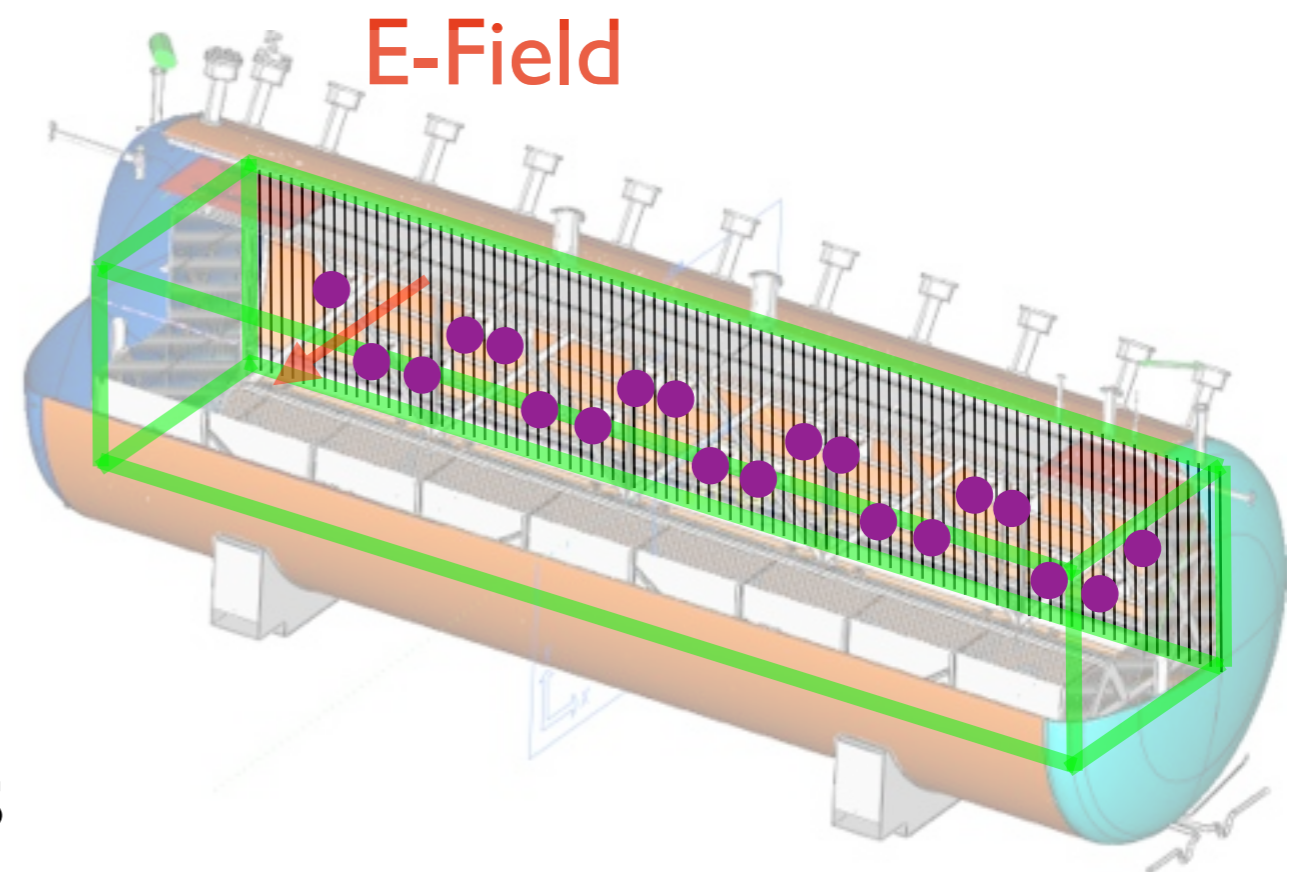
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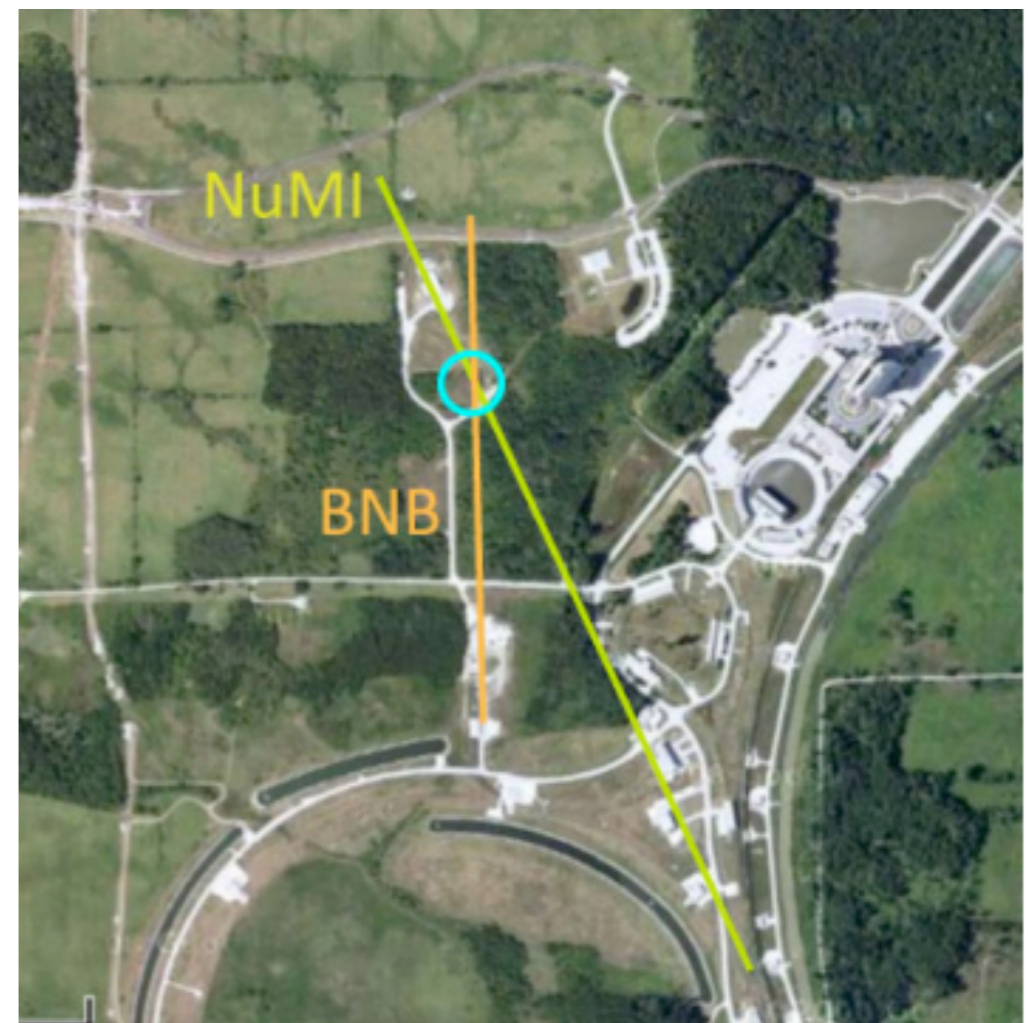
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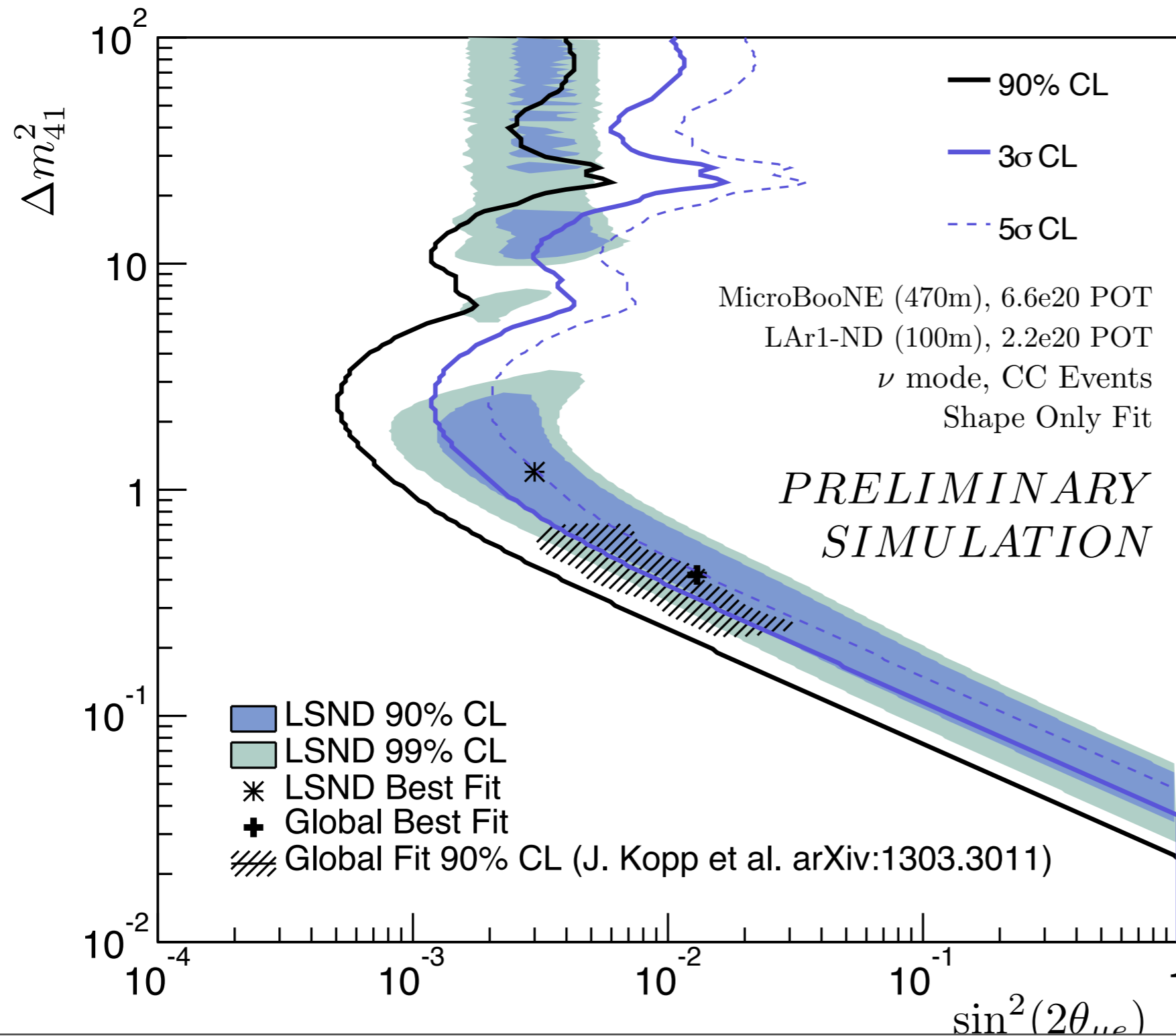


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3. The MicroBooNE Detector



3. Conclusion & Outlook

- MicroBooNE will bring light into the short-baseline neutrino anomalies
- MicroBooNE will perform cross-section measurements
- MicroBooNE will provide valuable R&D towards kilo-ton scale LAr TPCs
- MicroBooNE will start data taking end of the year

Thank You

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