

Forbidden transitions in the reactor anomaly

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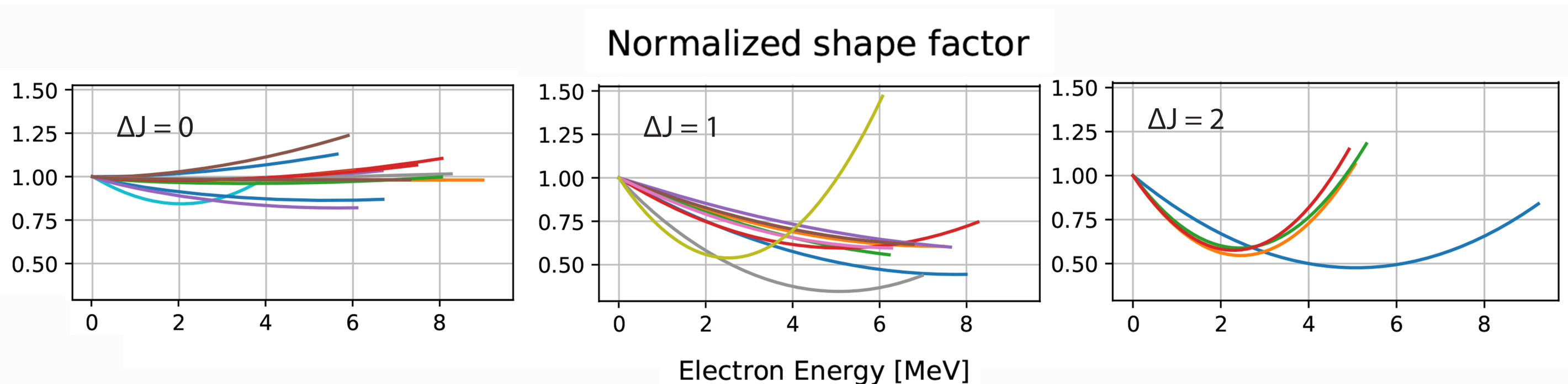
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Short-baseline reactor neutrino experiments see 2 problems compared to theory:

- Total # of detected antineutrinos 6% lower
- Detected energy spectrum has a bump

However, theory depends on knowledge of ~8000 (**forbidden**) beta decays:
HARD!

Use **Nuclear Shell Model** to calculate 29 dominant forbidden transitions



Results

- Forbidden decays **dominate** in most of experimental range
- Large spectrum changes, electron and anti-neutrino: **5% drop!**
- Large part of reactor bump can be **mitigated**

For more details:
See you at the poster!

