

## Opportunities in $CE\nu NS$ – Very Rough

- **The very low-energy (coherent) neutrino–nucleus cross-section.** How well can we compute it? Sources of theoretical errors? Opportunities for nuclear physics?
- **Theoretical particle physics.** Opportunities provided by  $CE\nu NS$ ? Models one can test: neutrino oscillations (sterile neutrinos), new neutrino properties (magnetic moments), new neutrino interactions, looking for new light, very weakly coupled particles (dark photons). What else (new ideas)? Different sources: reactor versus pion-decay-at-rest. Neutrino scattering versus antineutrino scattering? How do these compare with other probes?
- **Theory–experiment interface.** What is the sensitivity of planned experiments to the different new physics ideas? How does it really depend on experimental parameters – thresholds, backgrounds, etc? How much statistics is interesting? Improvements? What are these experiments “good for,” other than observing something that has never been observed and is an important background for direct dark matter searches? Parasitic measurements?