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Neutrino Self-Refraction in Core-Collapse Supernovae

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In recent years, we have understood that neutrinos in supernovae oscillate in unusual and interesting ways because their number densities are so large that they experience refraction due to each other. We explain this peculiar effect, often called “Collective Oscillations,” and discuss its impact on neutrino physics signatures and probes of supernova astrophysics at large underground detectors.