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New Prospects for Neutrino Astronomy in Underground Laboratories

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A variety of kton-scale neutrino experiments are operating, under construction, or planned for underground laboratories around the world. The key scientific goals include tests of fundamental neutrino properties using distant reactor or accelerator sources. I consider the prospects of these experiments for detecting astrophysical neutrinos — from the Sun, a Milky Way supernova, the diffuse supernova neutrino background, or even more exotic sources — and what this could reveal about both physics and astrophysics.