The status of neutrino oscillation searches employing nuclear reactors as sources is reviewed. This technique, a direct continuation of the experiments that proved the existence of neutrinos, is today an essential tool in investigating the indications of oscillations found in studying neutrinos produced in the sun and in the earth’s atmosphere. The low-energy of the reactor makes them an ideal tool to explore oscillations with small mass differences and relatively large mixing angles. In the last several years the determination of the reactor anti-neutrino flux and spectrum has reached a high degree of accuracy. Hence measurements of these quantities at a given distance \( L \) can be readily compared with the expectation at \( L = 0 \), thus testing disappearance. While two experiments, Chooz and Palo Verde, with baselines of about 1 km and thus sensitive to the neutrino mass differences associated with the atmospheric neutrino anomaly, have collected data and published results recently, an ambitious project with a baseline of more than 100 km, Kamland, is preparing to take data. This ultimate reactor experiment will have a sensitivity sufficient to explore part of the oscillation phase space relevant to solar neutrino scenarios. It is the only envisioned experiment with a terrestrial source of neutrinos capable of addressing the solar neutrino puzzle.
Positron kinetic energy (MeV)

rate (arbitrary units)

no osc.

CHOOZ

Palo Verde

Positron kinetic energy (MeV)
Daily vs Candidates

all data

Reactor Power (GW)