First Observations of Electron Neutrino Appearance at T2K

The T2K (Tokai to Kamioka) long baseline neutrino experiment features a beam of muon neutrinos produced at the J-PARC accelerator complex, on the Eastern coast of Japan, sent to Super-Kamiokande, in the mountains of Western Japan. Recently, T2K found indications that the muon neutrinos could oscillate to electron neutrinos on their 295 km journey, providing the first direct evidence for this type of oscillation. I will describe how T2K works, what makes it so suited for this kind of measurement, and how the analysis was conducted. Then, I’ll discuss the implications of this measurement for neutrino oscillation, and the recent developments in the field.