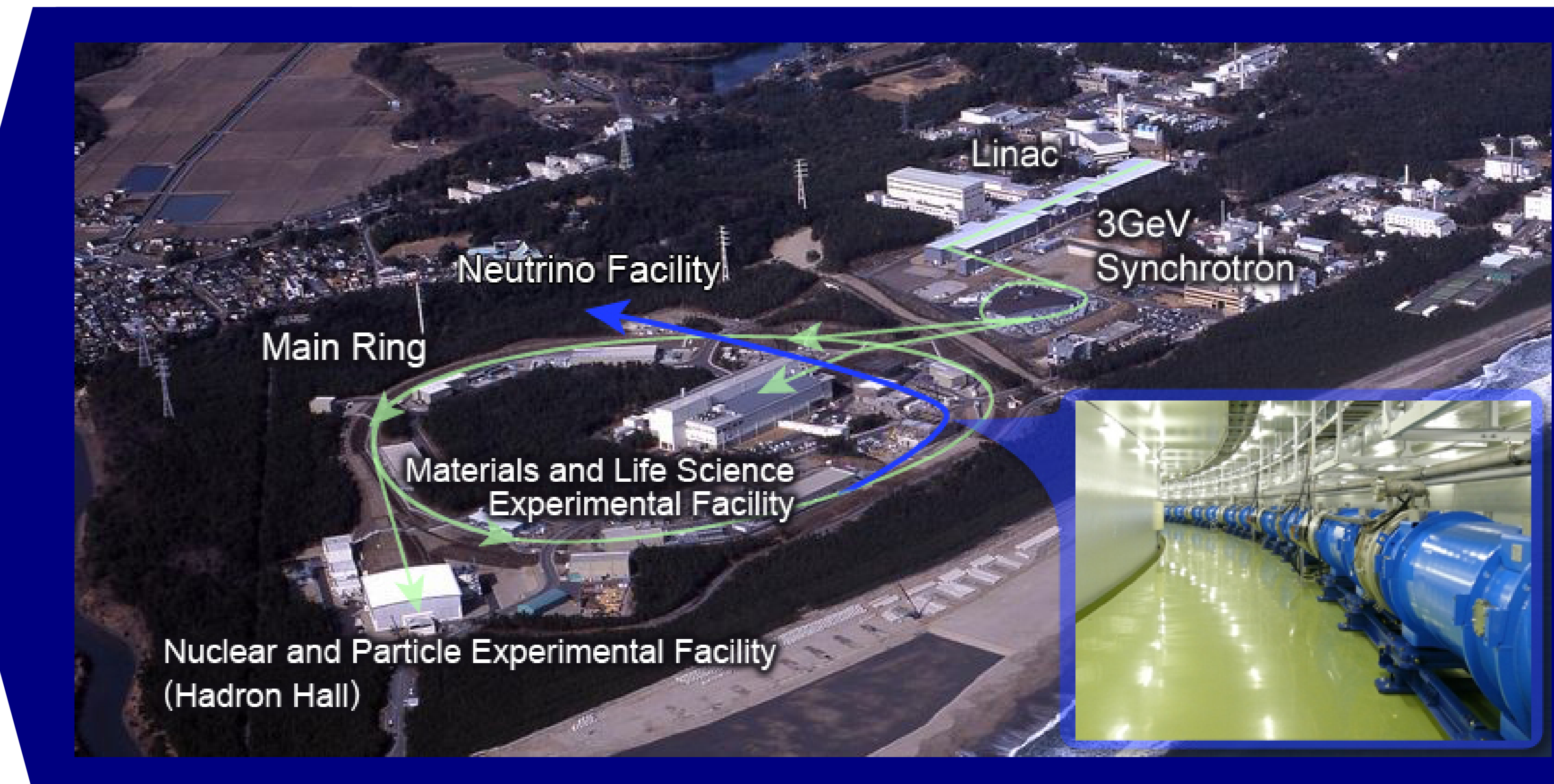
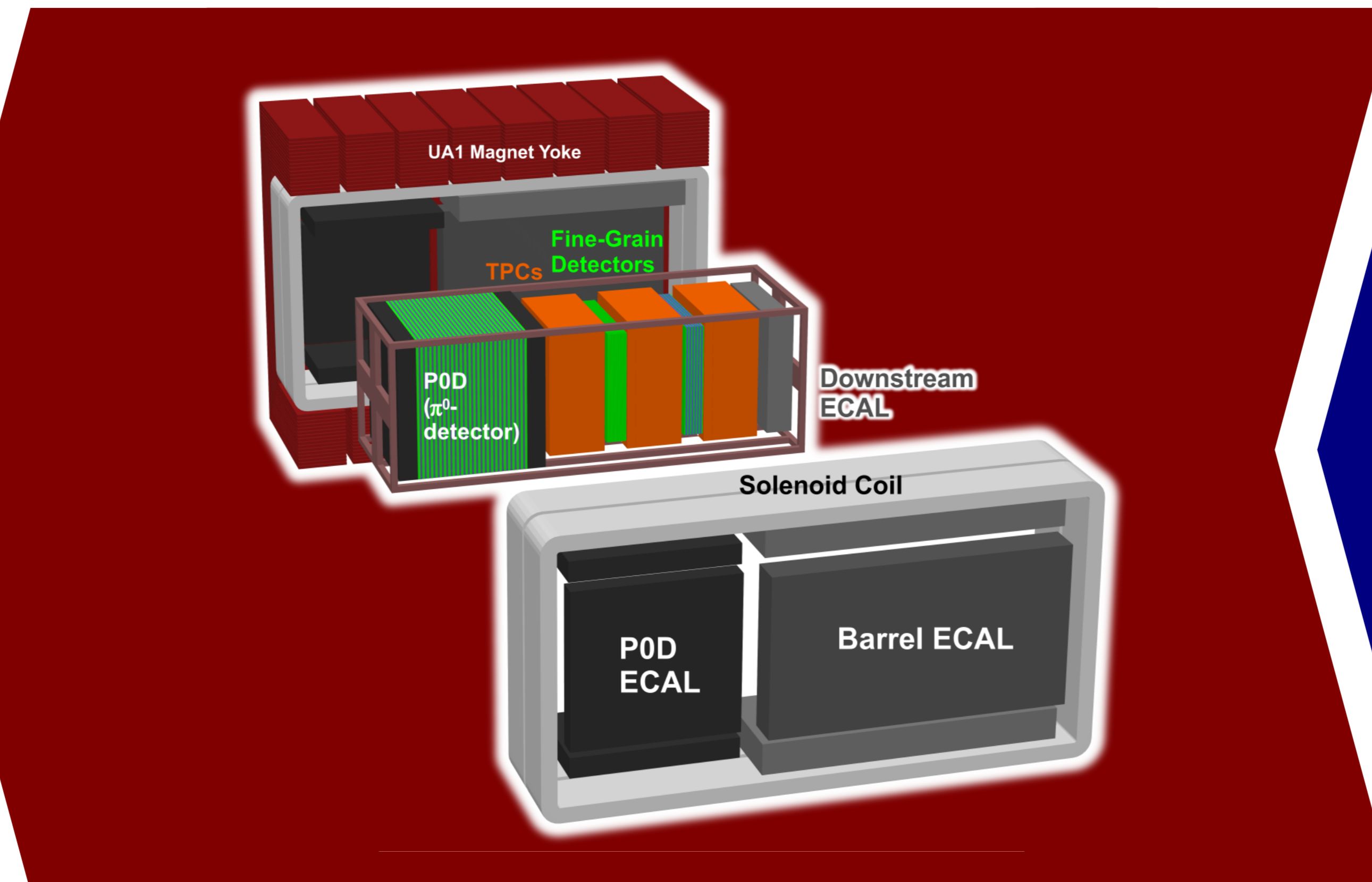
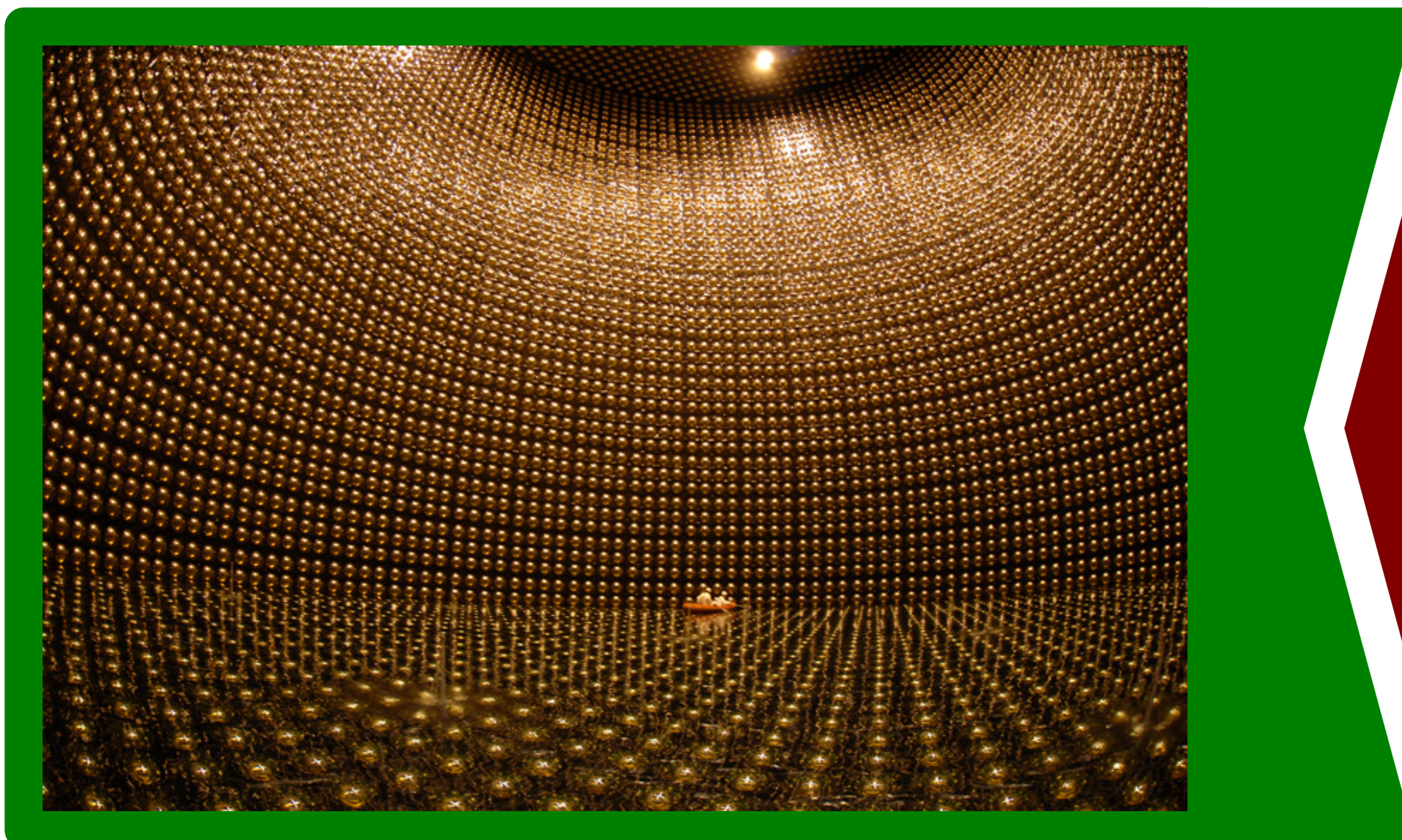
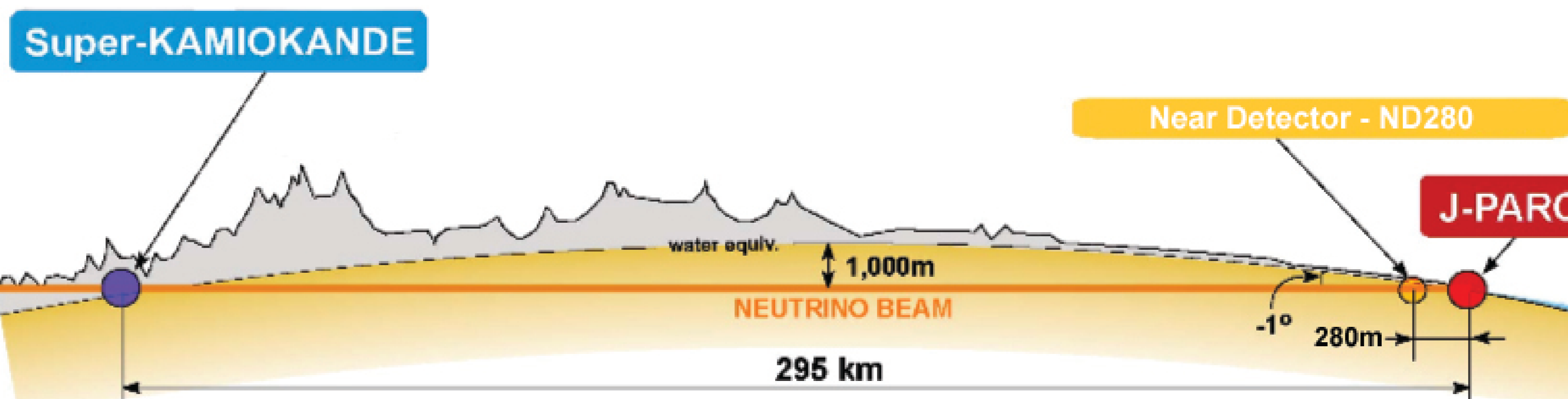


T2K: A neutrino oscillation experiment



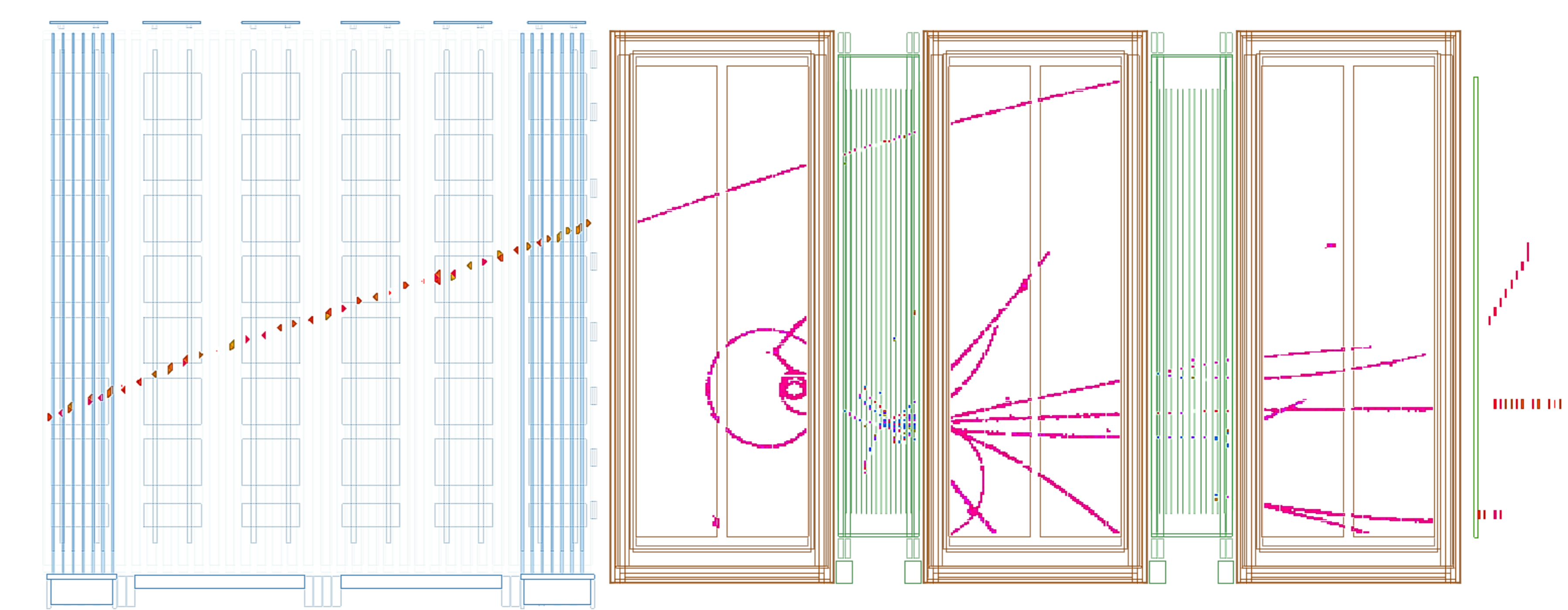
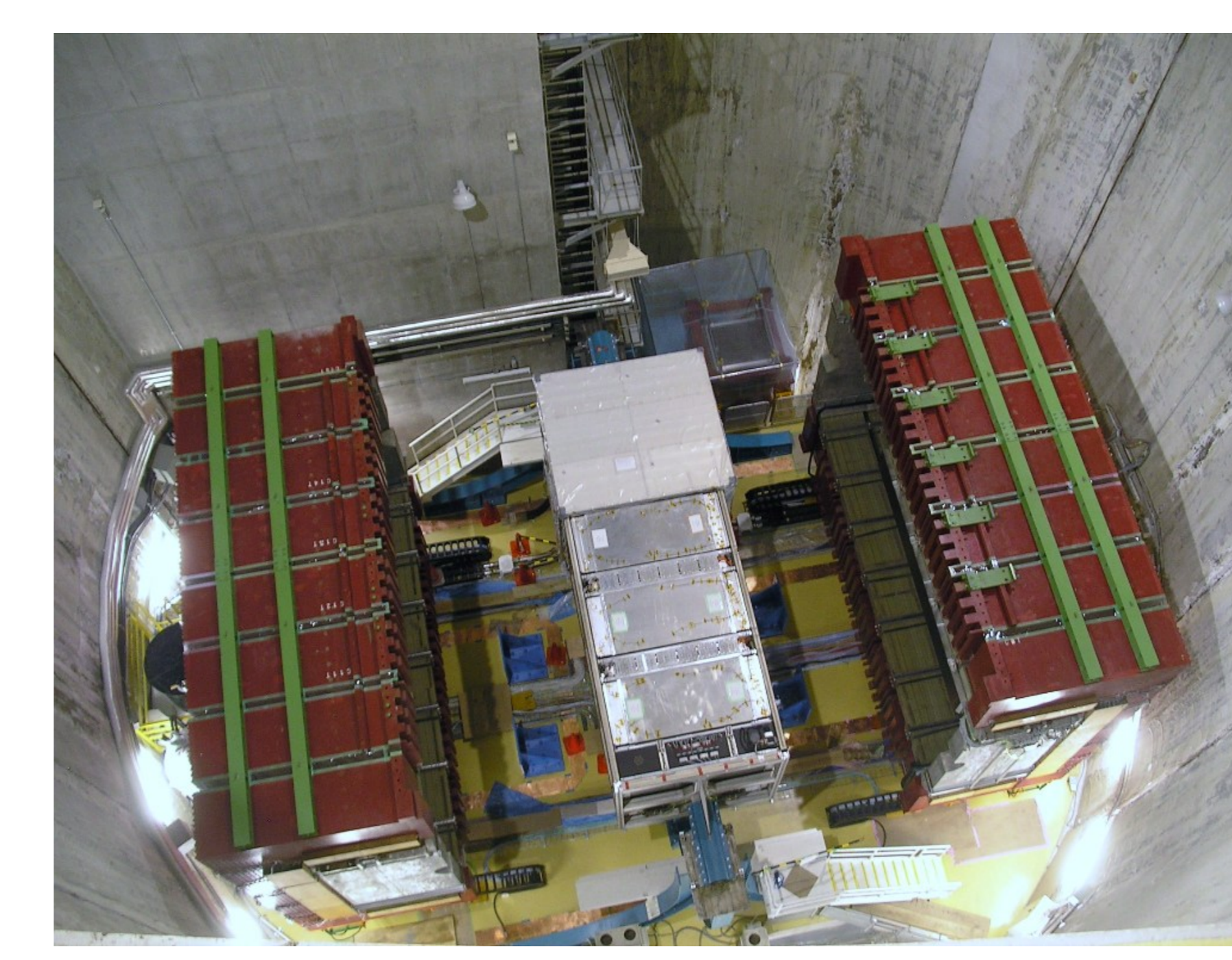
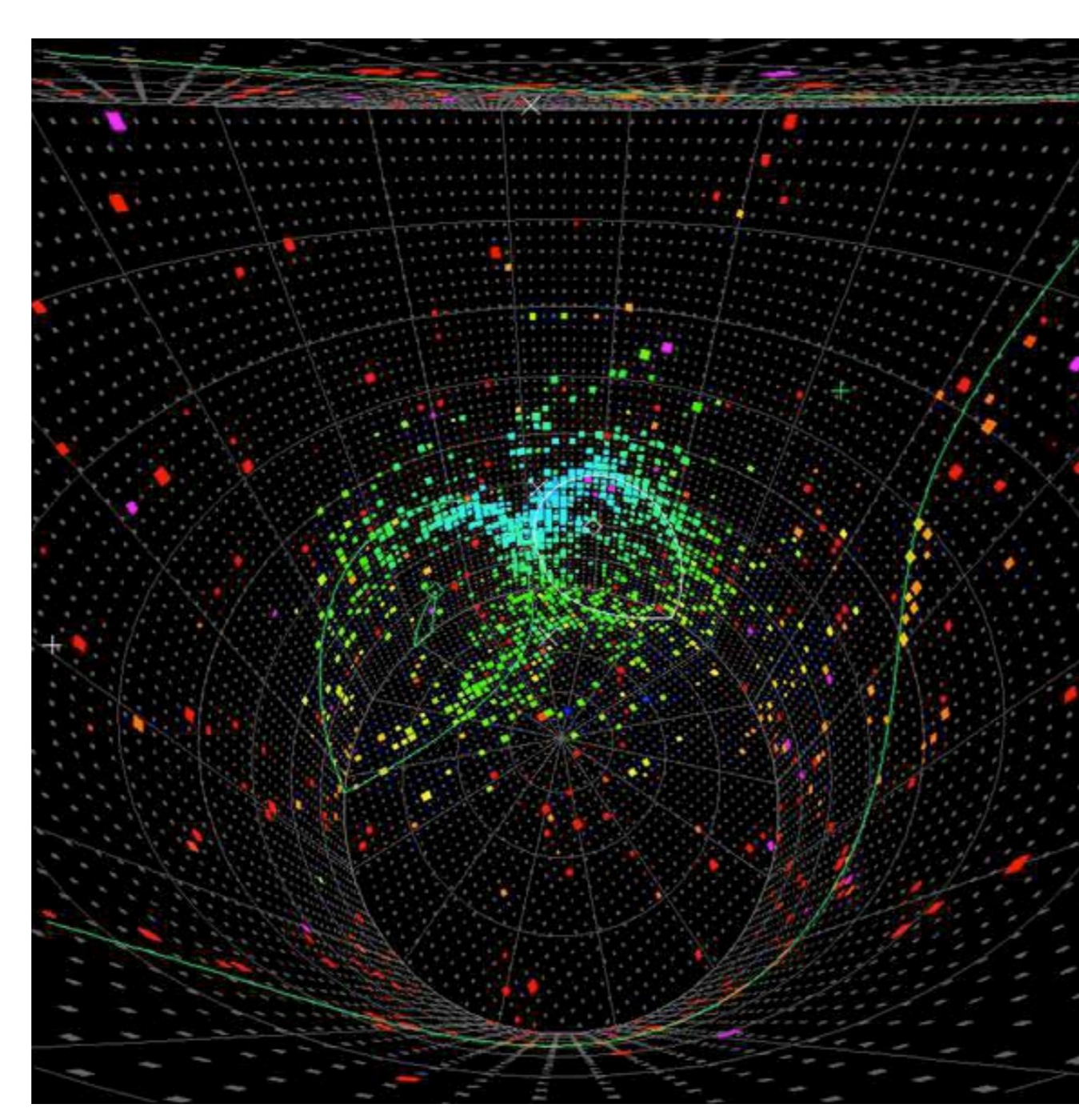
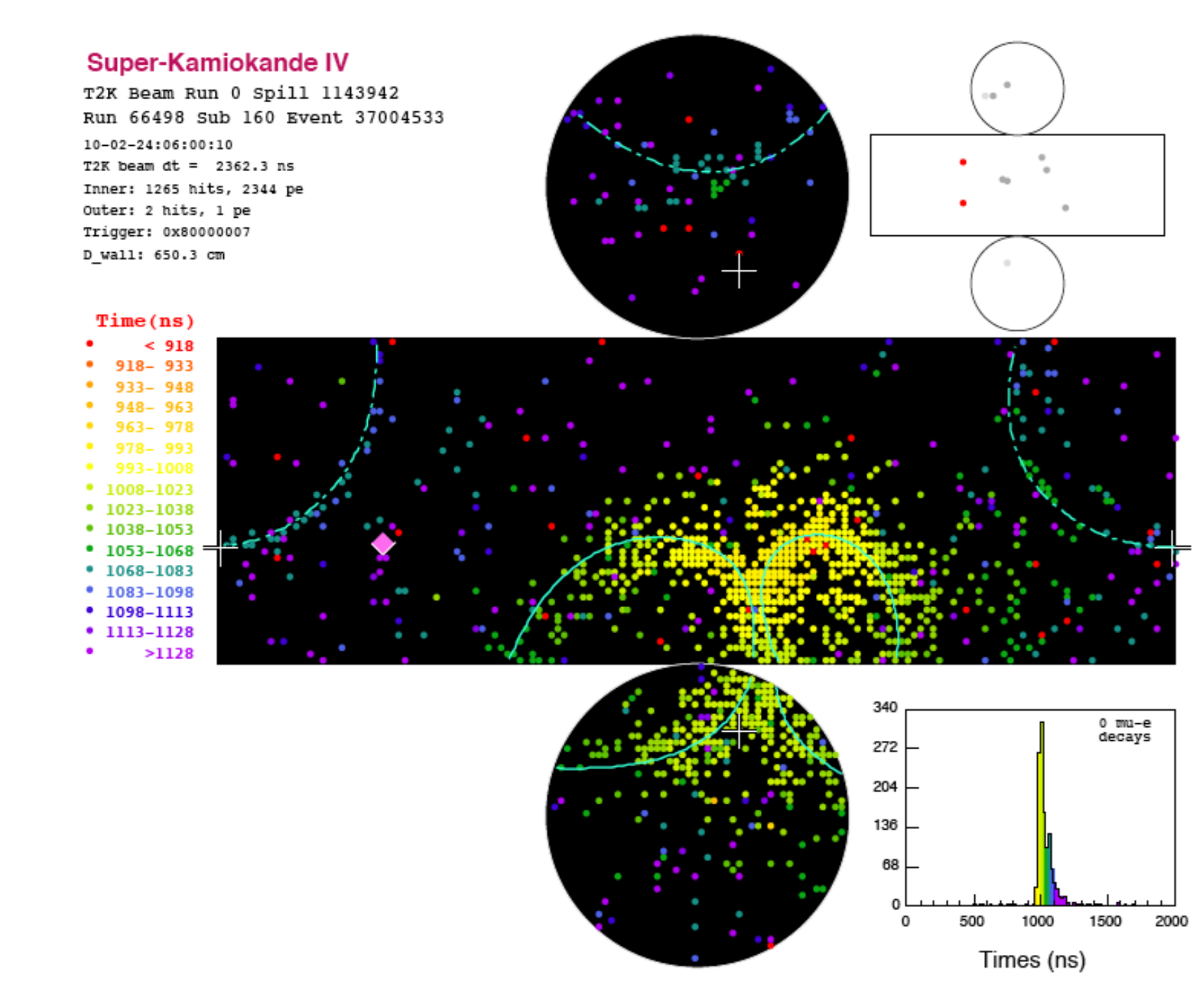
On the Eastern coast of Japan, the national accelerator complex **J-PARC** accelerates a 30GeV proton beam onto a graphite target, generating mesons which decay to produce a beam of muon neutrinos.

280m downstream lies the near-detector **ND280**. Its task is to measure the initial beam flux and to make critical measurements of neutrino interaction cross-sections.



The T2K far detector is located 295km west of J-PARC near Kamioka: **Super-Kamiokande** is a 50kton water-Cherenkov detector which will measure the muon and electron neutrino fluxes after oscillation.

Both detectors are situated 2.5° off the beam-axis to give a sharper energy spectrum than conventional on-axis beams.



T2K began taking data in January 2010. The first data taking period lasted for six months, ending in June 2010. In this time thousands of events have been collected by the ND280.

The first T2K event at Super-Kamiokande was seen in February. This was a significant milestone, confirming that all parts of the experiment were working correctly.

The experiment was shut down for the summer of 2010 for commissioning work. In this period, the twelve remaining electro-magnetic calorimeters were installed.

These parts of the ND280 were designed and built at various institutes in the UK, including here at the University of Warwick.

The experiment will turn back on in November 2010 to begin the second phase of data taking. This will be the first period with the entire ND280 in place.

It is expected that the first publications from the initial running period will be released early in 2011. The main physics results will follow as more data is taken.