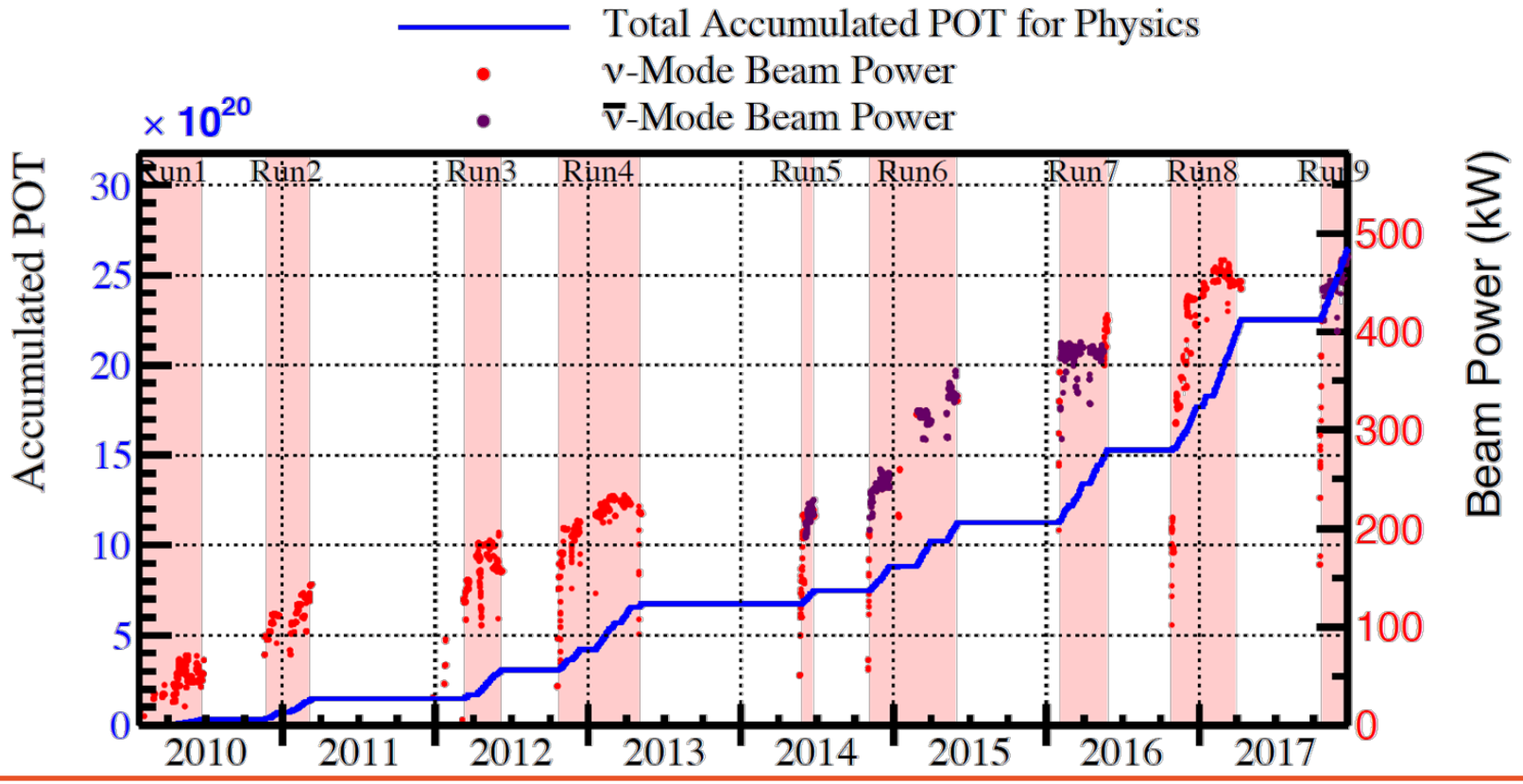
# Movement Frequency

- Last meeting, there was some extra discussion regarding the movement frequency requirement
- What is the period over which we sample a complete set of off-axis locations?
  - Does this period change over time?
- An important input to this requirement is the timescale over which we expect significant changes to the beam (next slides)
  - Input would be useful from the beam group
- It may also be useful to consider this from the perspective of expected detector capabilities
  - Input would be useful from the LAr and MPD consortia regarding ramp-down & ramp-up times

# T2K Beam Delivery

- In T2K, beam delivery times are short (few months / year)
- Can potentially switch between neutrinos and antineutrinos each run
- Each beam run is frequently preceded by beam modifications and tuning to increase power / reduce power losses
- Much of Run 3 was taken at a lower horn current



# NOvA Beam Delivery

- Longer runs (likely more similar to expected DUNE 56% uptime)
- Gradual increase in beam power and switching between nu/anti-nu
- How different will the DUNE beam be in each run? Can we assume that we'll be able to combine ND data from different off-axis positions if they are taken during different runs?