Imperial College London

MaCh3 Summer Plans

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Overview

- Range of plans for Summer 2017 analysis
- Our default analysis will use the 5 samples we already have
  - We will use the new cross-section parametrisation and E_{rec}-θ binning for ν_e
- We also plan to look at adding new samples and studying new parametrisations
  - These can be added to the main analysis depending on progress

5 sample analysis

- Will produce 5 sample joint fit using data available
- Patrick will produce new SK splines
  - Fairly quick after T2KRW validation completed
- Kirsty will implement new cross-section parametrisation including BeRPA at SK
  - Likely to take about a month of work once splines are available
- Clarence will implement psyche v3 and new cross-section parametrisation at ND280
  - A lot of this work is already done

New samples

- Leila will look at adding ν_μ CC1π APFit sample
  - Should take a few months
- Elder will look at adding ν_μ CC1π fitQun sample
  - Aiming for sensitivity studies in a couple of months
- Clarence will look at subdividing the SK samples into forward and not forward
  - Aiming for sensitivity studies in the Summer

New parametrisations and analyses

- Leila will look at p-theta binning
  - Should take about a month once splines from Patrick are available
- Patrick will look at 2D binning in ν_μ sample
  - About a month of work if splines with fine enough binning to see oscillation dip do not take up too much memory, a few months if more major work required
- Tarak will look at adding a joint ν_μ-ν_e ND280 sterile neutrino search
  - Will start with SBL ν_μ disappearance analysis an then add ν_e

- We should have the 5 sample analysis with new cross-section parametrisation ready as a minimum
- We have several plans for improvements that we will add depending on progress