

# **VALOR ND Fitter Second Run-through Update**

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DUNE ND Taskforce Meeting  
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# Status

- Two big physics improvements for second run-through:
  - MINERVA flux matrix implemented.
    - 104 flux systematics.
  - Implementing cross-section systematics starting next week.
- Target is completion of second run-through in time for May collaboration meeting.
- Current personnel:
  - Costas Andreopoulos.
  - Lorena Escudero.
  - Yours truly.

# List of Proposed X-sec Systematics

- 6 correlated CCQE parameters, 3 kinematic bins each for Nu/NuBar.
- 12 correlated CC1pi parameters 3 kinematic bins each for Nu/NuBar and charged/neutral pions.
- MEC normalisation systematic.
- Other CC resonance (eg 1-gamma) systematic.
- 6? CC DIS (>1 pion) systematics, 3? each for Nu/NuBar.
- NuE/NuMu normalisation systematic.
- Nu/NuBar normalisation systematic.
- NC normalisation.
- Coherent normalisation.
- Pion and nucleon mean free path systematic.
- Pion charge exchange fraction systematic.
- 1 Pion absorption & multi-nucleon knockout systematic.
- Pion inelastic fraction systematic.
- A hadronization systematic for events containing Etas etc.

TOTAL  $\approx$  35 xsec params

Implemented via GENIE