3-pt functions using Lattice QCD \rightarrow NME \rightarrow FF



Challenges:

- The signal degrades exponentially $e^{-(M_N-1.5M_\pi)\tau}$
- Calculations limited to $\tau \approx 1.7 \ fm$
- Excited state contribution is large
- Dense spectrum of $N\pi$ and $N\pi\pi$ states above ~1100 MeV as $\vec{p} \rightarrow 0$
- Which excited states contribute significantly???

Step 1: **3-pt function**: Methodology known. Need computing resources for $a \approx 0.05 \ fm$, $M_{\pi} \approx 135 \ MeV$, large volume lattices Step 2: **3-pt** \rightarrow ground state NME. Remove excited state contributions Step 3: NME \rightarrow FF. Straightforward