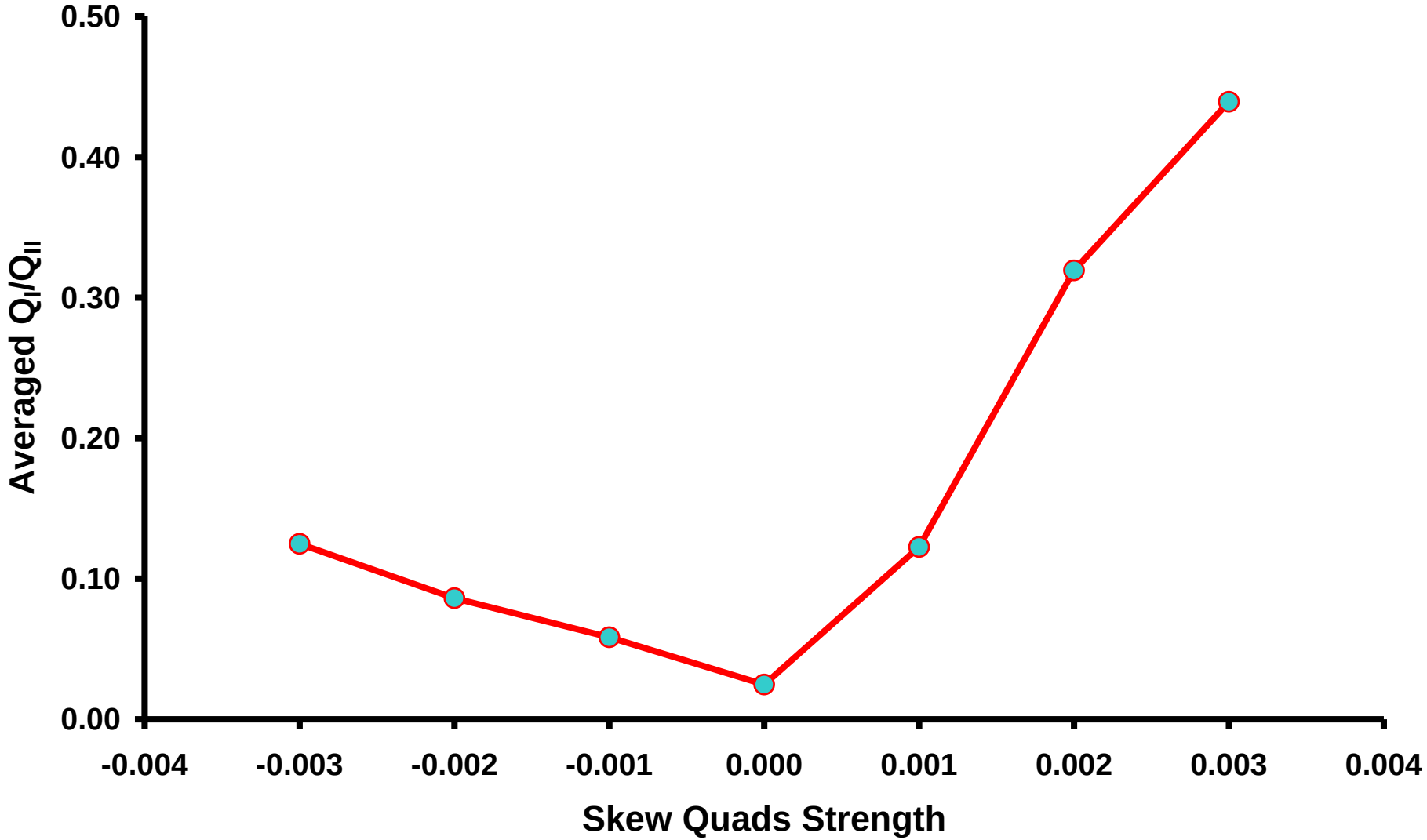
Local SPS Coupling Measurement

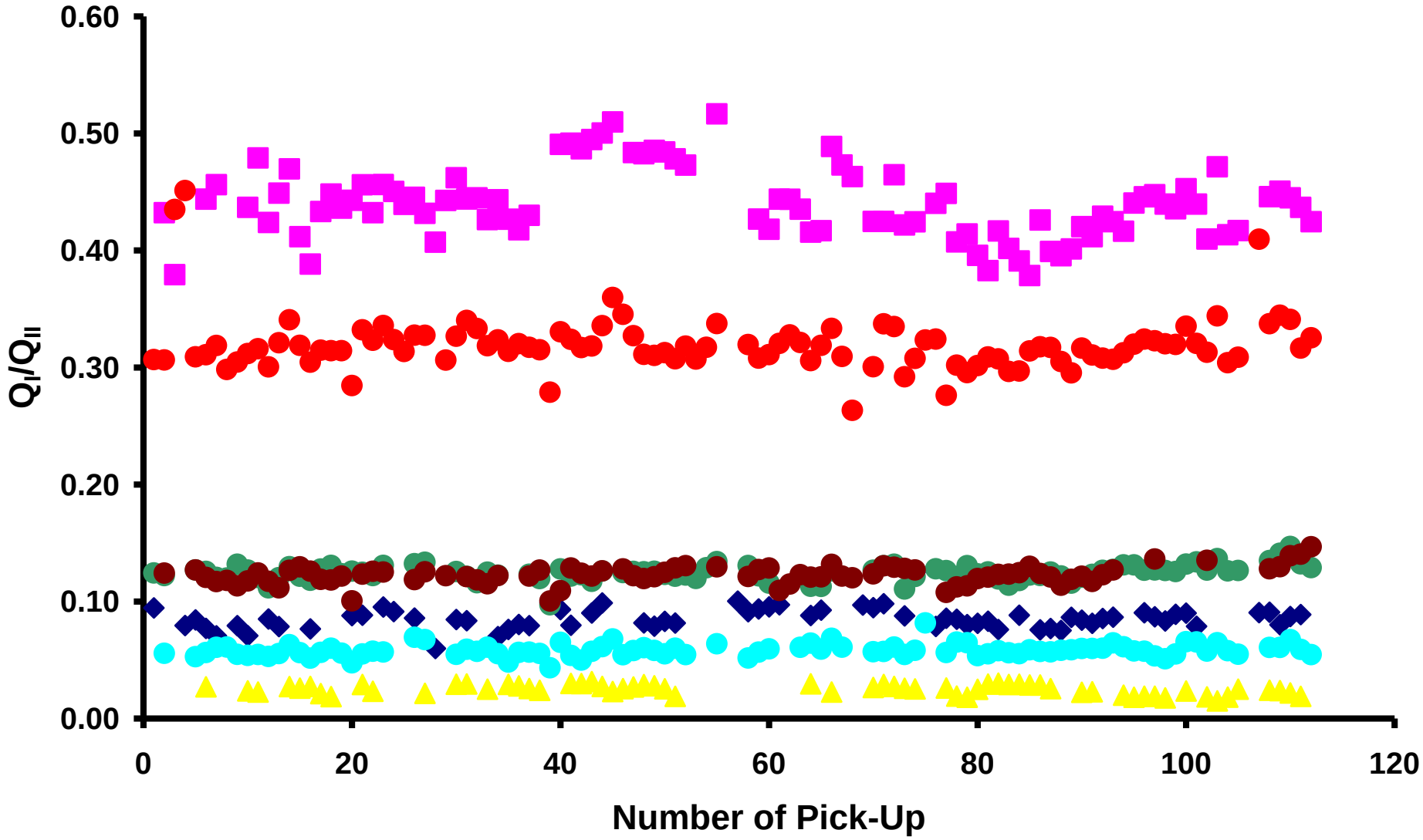
- Scan of Skew Quadrupole LQSA strength
- Find minimum of Coupling
- Check if there is local coupling around the machine (0, 1) resonance (complex FFT)
  - *Amplitude*
  - *Phase*
- Multiturn Data stored in SDDS (small bug found and corrected)
- C code successfully tested to read SDDS and produce Input for SUSSIX
- Data Filtering "half" automatic → Rogelio's Filtering required in the future

Tune Ratio versus skew Quads

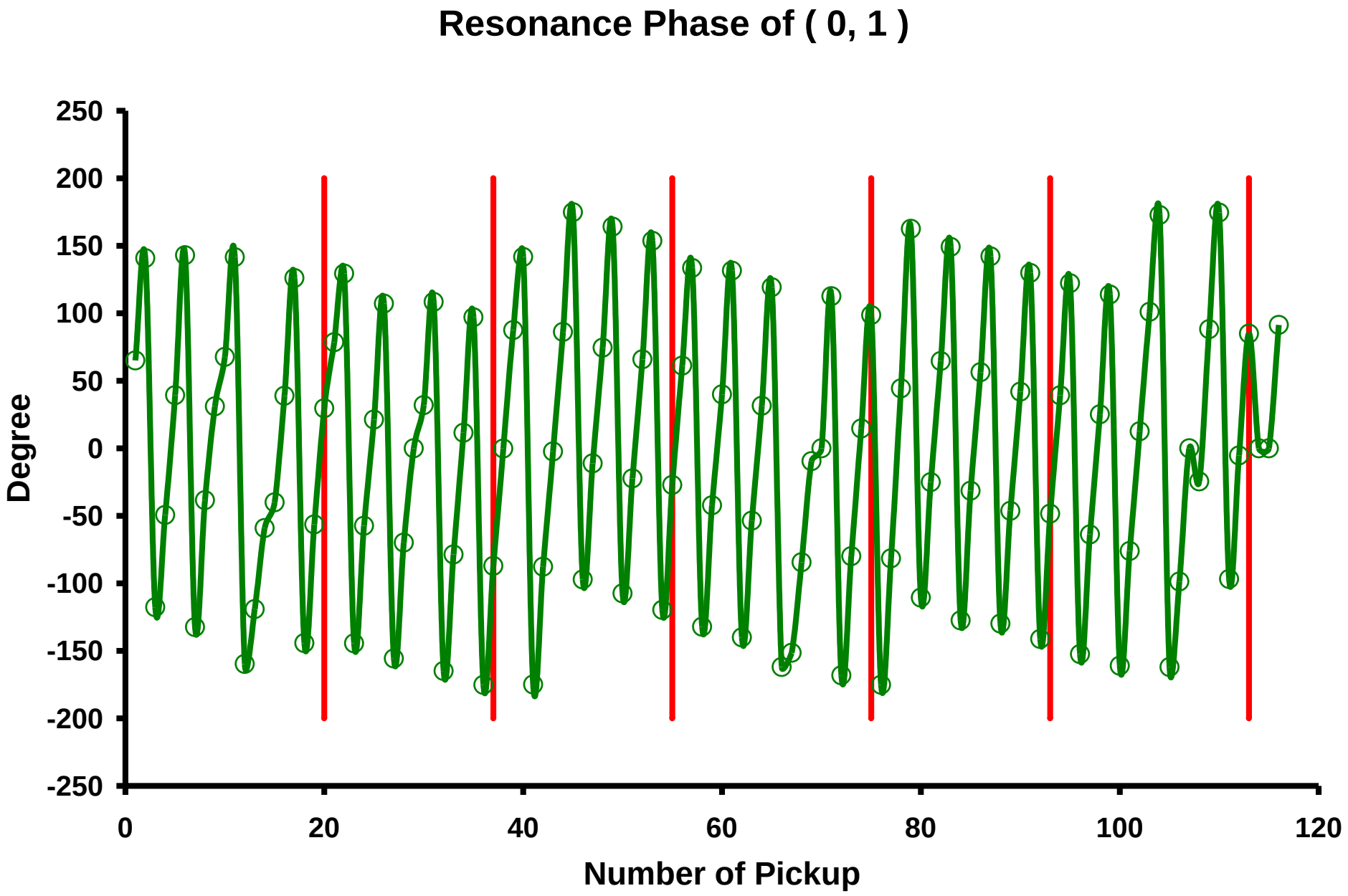


LCU 19.11.2007 - Frank Schmidt

Local Coupling Amplitude



LCU 19.11.2007 - Frank Schmidt



LCU 19.11.2007 - Frank Schmidt

Conclusions

- In this SPS MD cycle very little linear coupling is found
- Not surprisingly there is little local coupling!
- The 6 LQSA are not quite visible in the resonance amplitude
- There is some “mild” indication that the resonance phase jumps at the location of the LQSA
- SPS Multiturn & LHC BPM SDDS defined and allow more subtle analysis à la SUSSIX
- Also done is SDDS definition for the LHC BPMs, in fact quite similar to the SPS SDDS
- Better BPM filtering required ➔ Rogelio