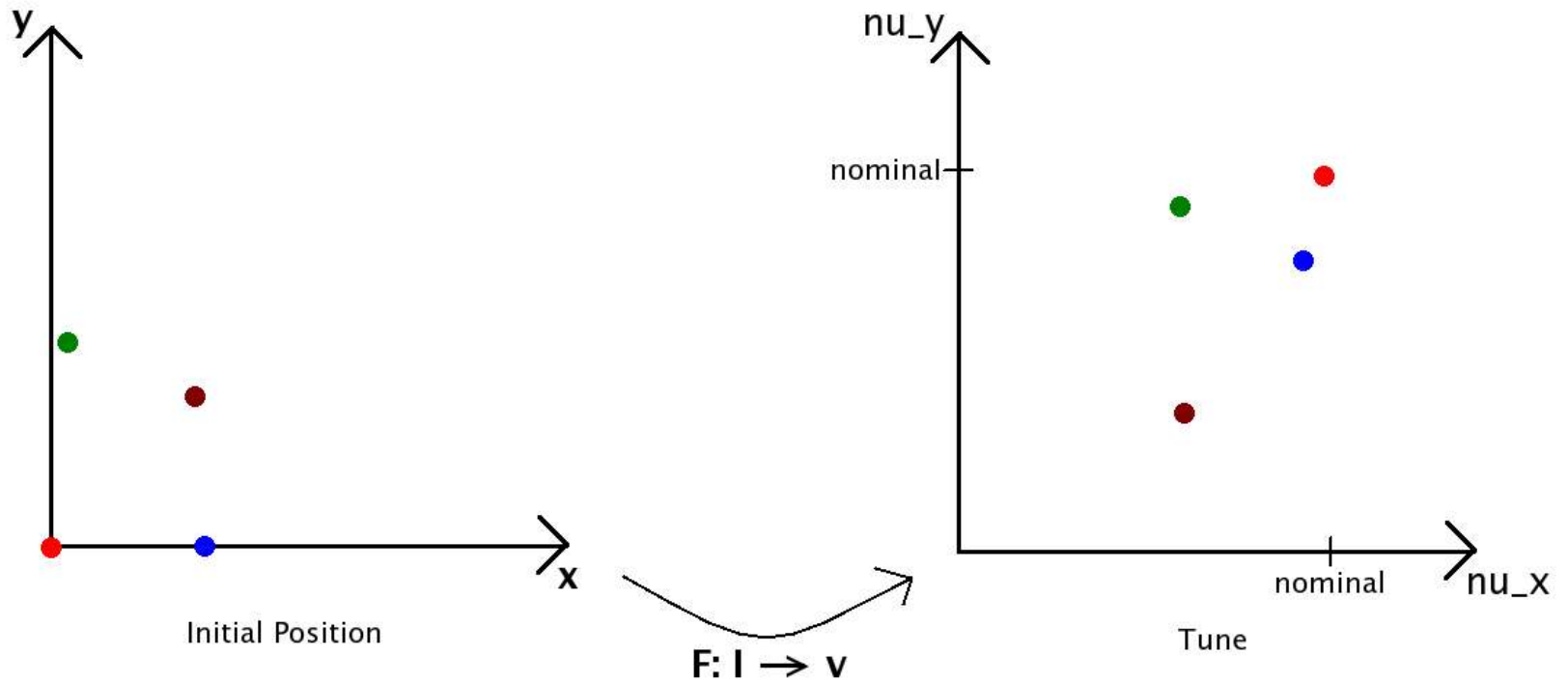
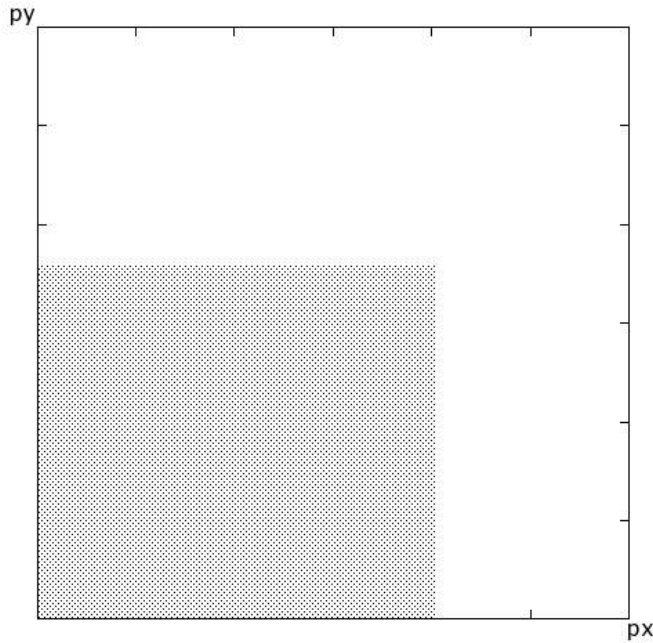


Frequency Map Analysis

Example of Frequency Map with Four Particles

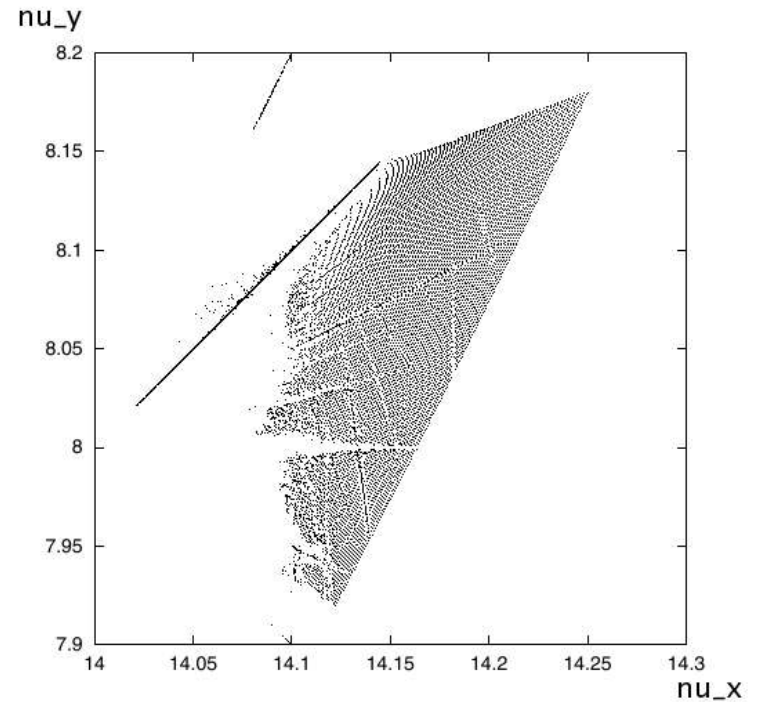


Actual Simulation Done on ALS



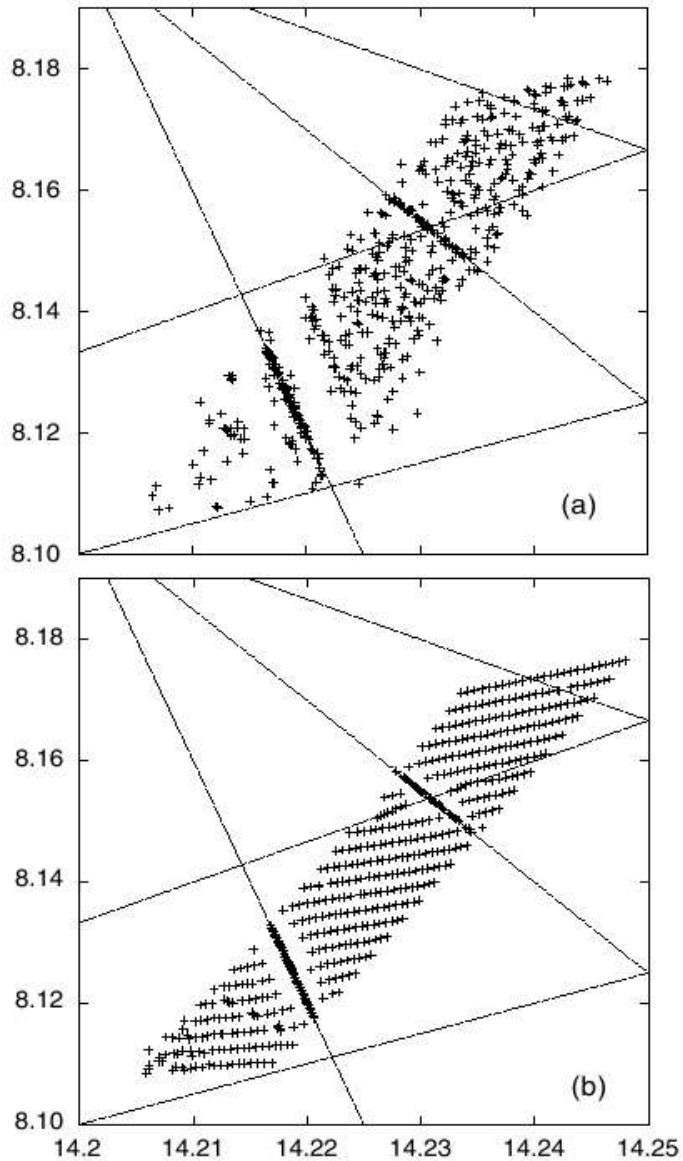
Initial Distribution of Particles in Momentum Space.

Tracking: 1000 turns



Distribution of Particles in Tune Plane after 1000 Turns on Ideal ALS Lattice.

Demonstrated Accuracy



Experiment

Simulation

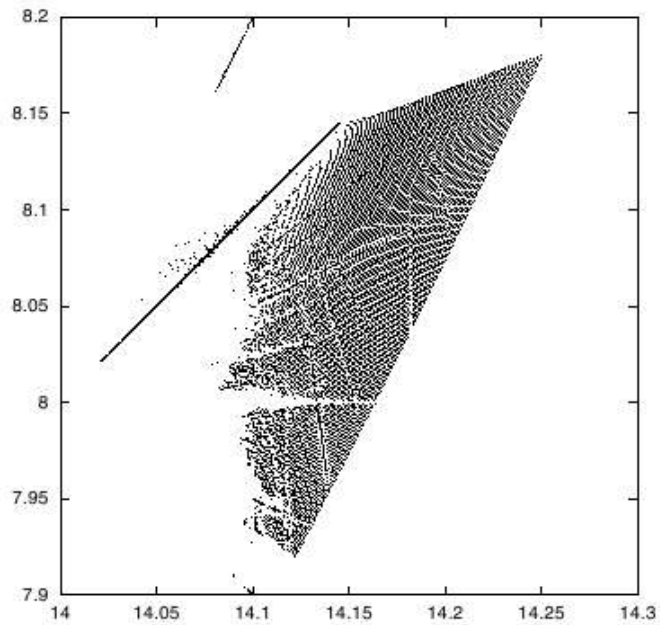
What's it Good For?

- The map F should be regular. i.e. non-chaotic.
- Resonances appear as attractors.
- We can view the map to gauge the stability of a lattice.

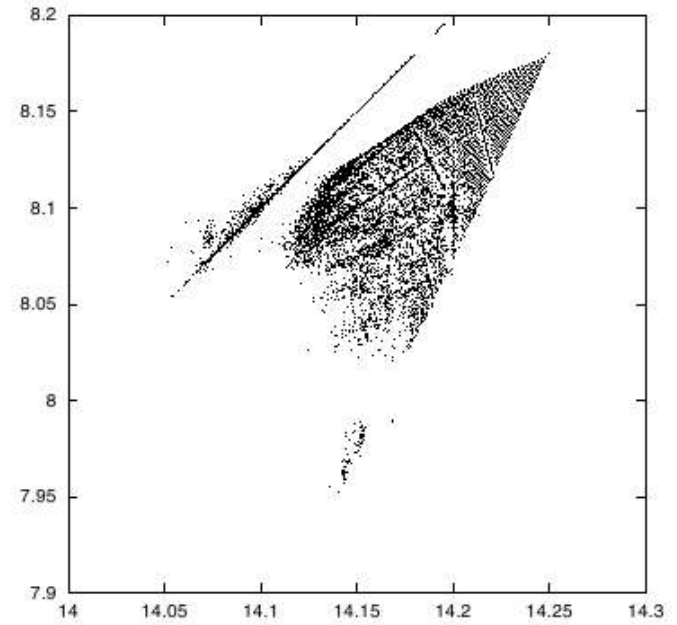
Diffusion Rate

- How quickly a particle moves around the tune plane
- Can be plotted versus initial conditions or initial tune
- Provides a picture of the stability of the lattice

Gauge effect of misalignments and corrections



Ideal Lattice



Lattice with errors