

Fighting instability by modulating sextupoles

- Running with small chromaticity greatly improves the beam lifetime at low energy, however, it is more likely to encounter instability problem. This modulation of sextupole is aiming to stabilize the beam.
- Modulation of sextupoles at synchrotron frequency introduce tune spread for single particles.
- It is shown in simulation the coherence time is shorter with modulation.
- In the experiment, IR sextupoles were modulated to generated 1 unit peak-to-peak chrom sine wave. The BTF measurements were done with and without the modulation. Color traces are with modulation, grey ones are without modulation of sextupoles

