Slow Wave Analysis in CesrTA

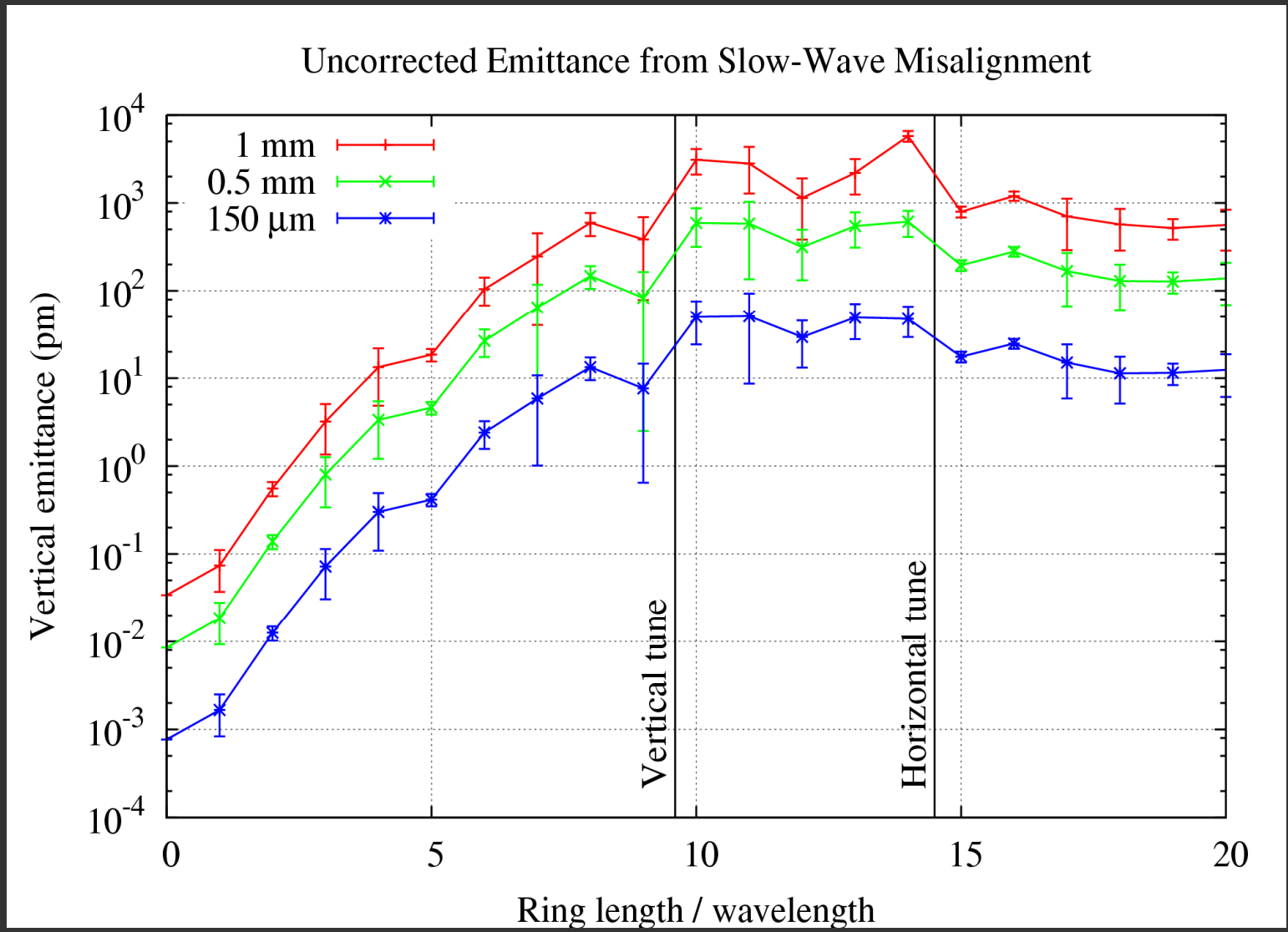
- The survey of elements relative to each other produces correlated *slow waves* in the misalignments.
- These can be modeled as sinusoidal variation in the vertical displacement.

$$\Delta y = A\sin(ks + \phi)$$

- We require that the slow wave close on itself.

$$k = \frac{2\pi n}{\text{ring length}}$$

- The amplitude of the slow wave is estimated to be as large as 1mm, and the phase of the wave does have some impact.



At each wavelength, error bars show the max/min values as the phase varies (100 steps)