

Colliders
(and their
injectors)

- Luminosity or brightness

$$\mathcal{L} = \frac{N_1 N_2 f n_b}{4\pi \sigma_x \sigma_y}$$

X-ray
storage
rings

- Photon brilliance

$$B = \frac{N_p}{4\pi^2 \bar{\epsilon}_x \bar{\epsilon}_y}$$

- Extreme intensity within ultra-low beam dimensions
 - Lattice design, Collective effects, Associated technology