



118th FCC-ee Optics Design Meeting



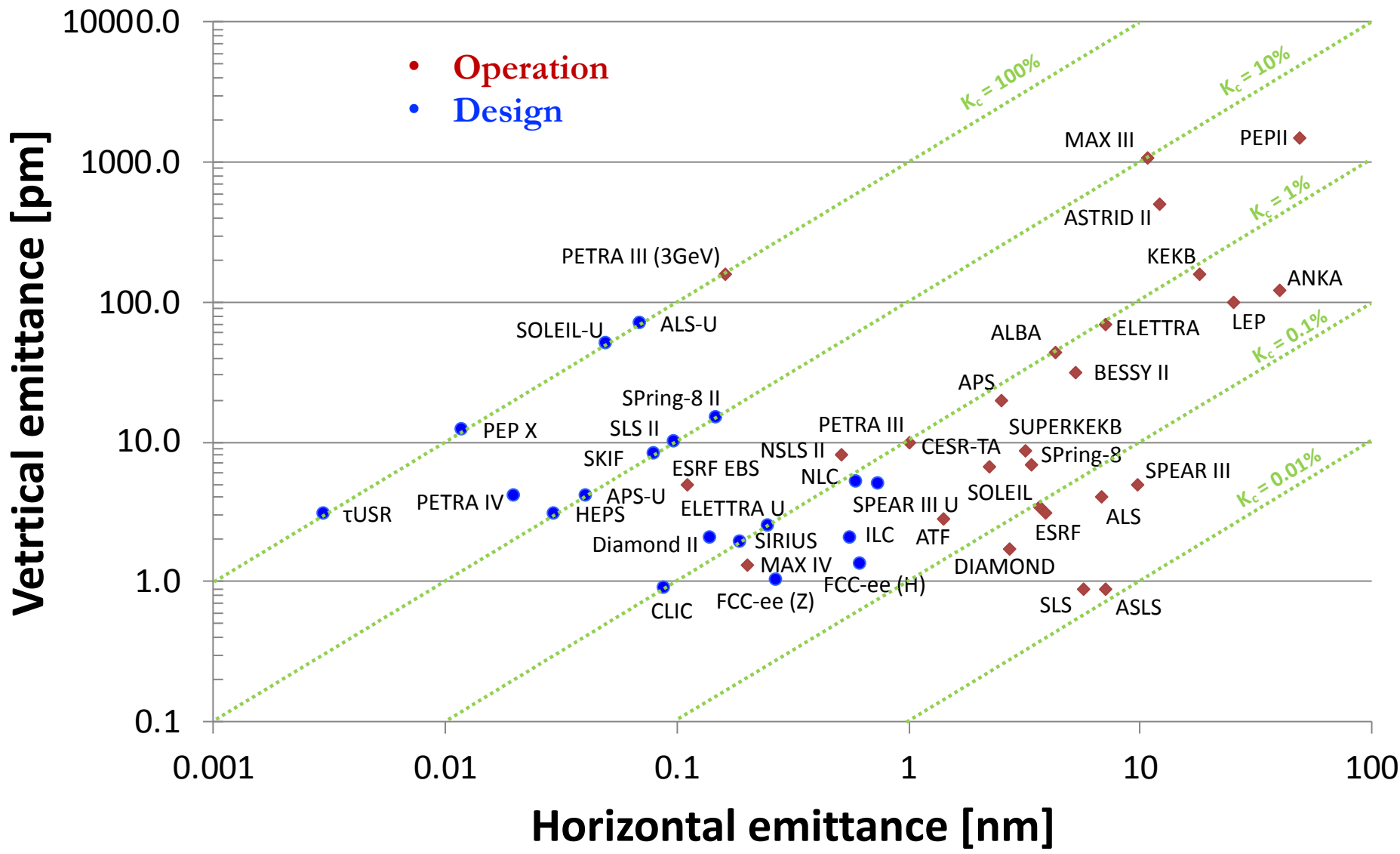
# Low Emittance Rings emittance Survey

Yannis Papaphilippou, CERN

Thanks to:

K. Oide, F. Zimmermann and the Low Emittance Rings'  
community

# Horizontal vs Vertical emittance



# Comments



- **Directly measured** values through profile monitors pictured (Touschek lifetime estimates have shown to under-estimate vertical emittance)
- Light source users are **not interested** in (vertical) emittances below the **diffraction limit** ( $\sim 10$  pm)
- **Coupling** reduced to **0.1% - 0.01%**
- In the **present generation** of light source rings, the trend is to reduce mainly the **horizontal emittance** and keep the vertical relatively large (Touschek lifetime, IBS)
- **Next generation** designs consider **fully coupled** lattices in order to reach **diffraction limit** in the **horizontal plane**