USAXS

vacuum   I

I_o

q

sample

sample

detector (photodiode or CCD)

2θ

I

Si (111) analyzer crystals

ion chamber

Io

Si (111) collimating crystals

2D slits

mirrors

E

Si (111) monochromator

33ID undulator
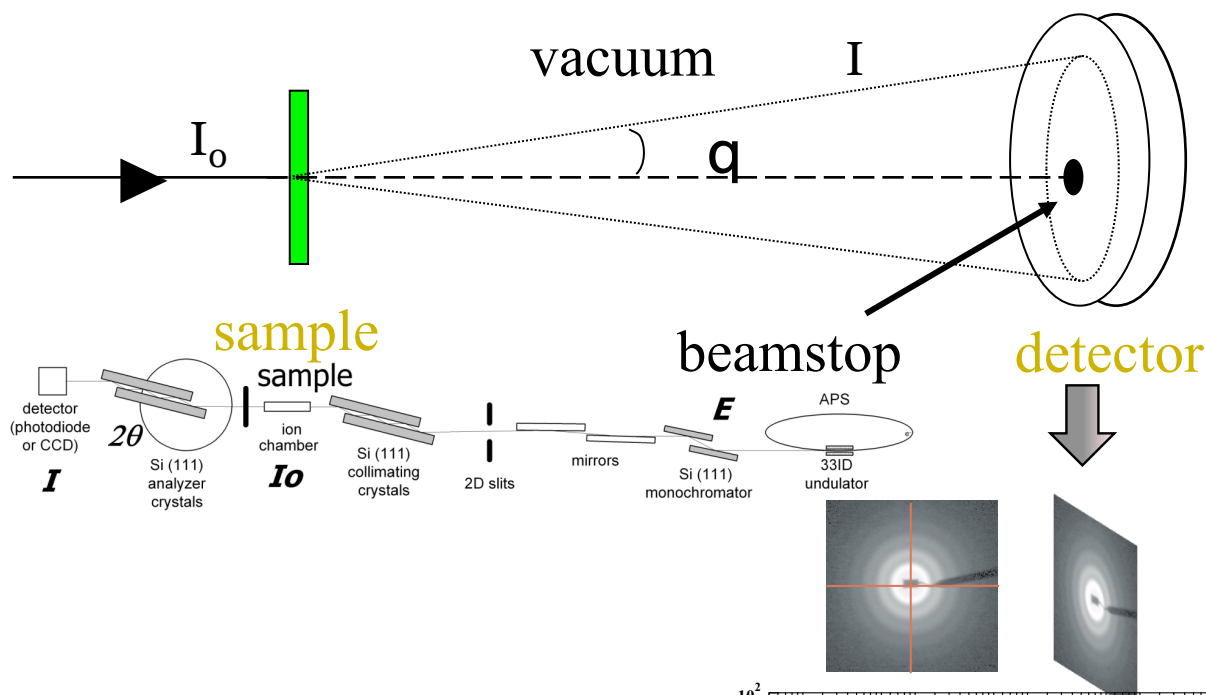
APS

beamstop   **detector**

Guinier's Law $I(q) = G \exp\left(\dfrac{(-q R_g)^2}{3}\right)$

Power Law $I(q) = B_f \, q^{-d_f}$

Scattering Vector $q = \dfrac{4\pi}{\lambda} \sin\left(\dfrac{\theta}{2}\right)$

- Printed Silicon from University of Cape Town
- Unified Fit (UC SAXS/USAXS Sachit Chopra)

Intensity (cm)$^{-1}$

q (Å)$^{-1}$

Beaucage G. Journal of Applied Crystallography 28 (1995) 717; Journal of Applied Crystallography 29 (1996) 134.