



Neutron guide system for multiple beam SANS

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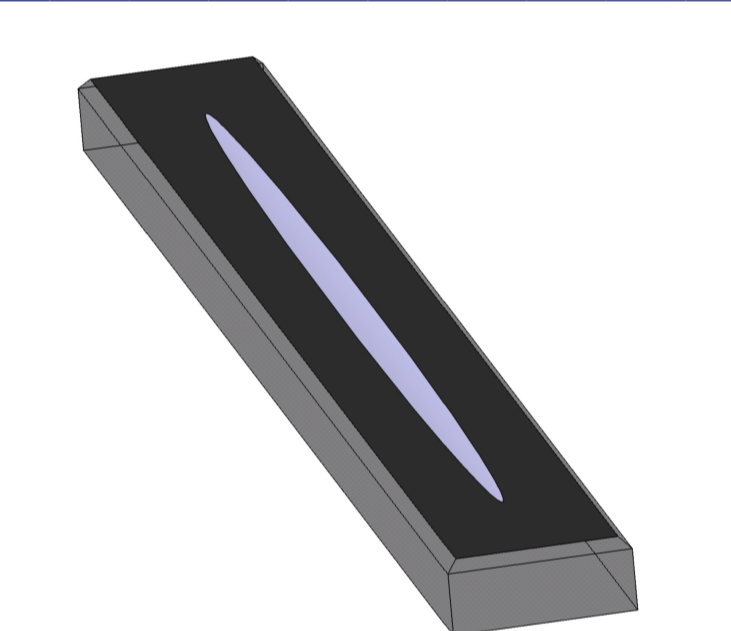
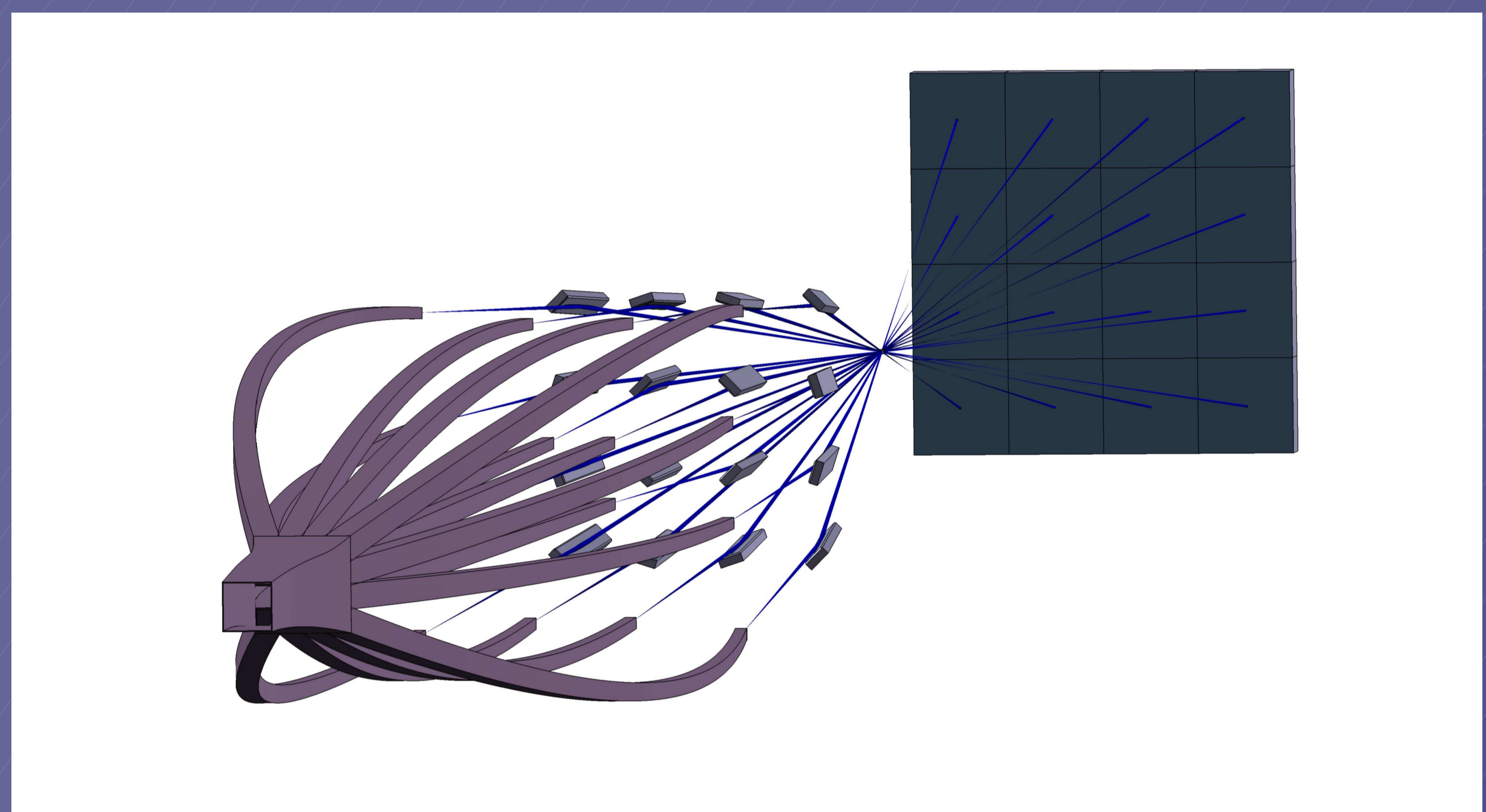
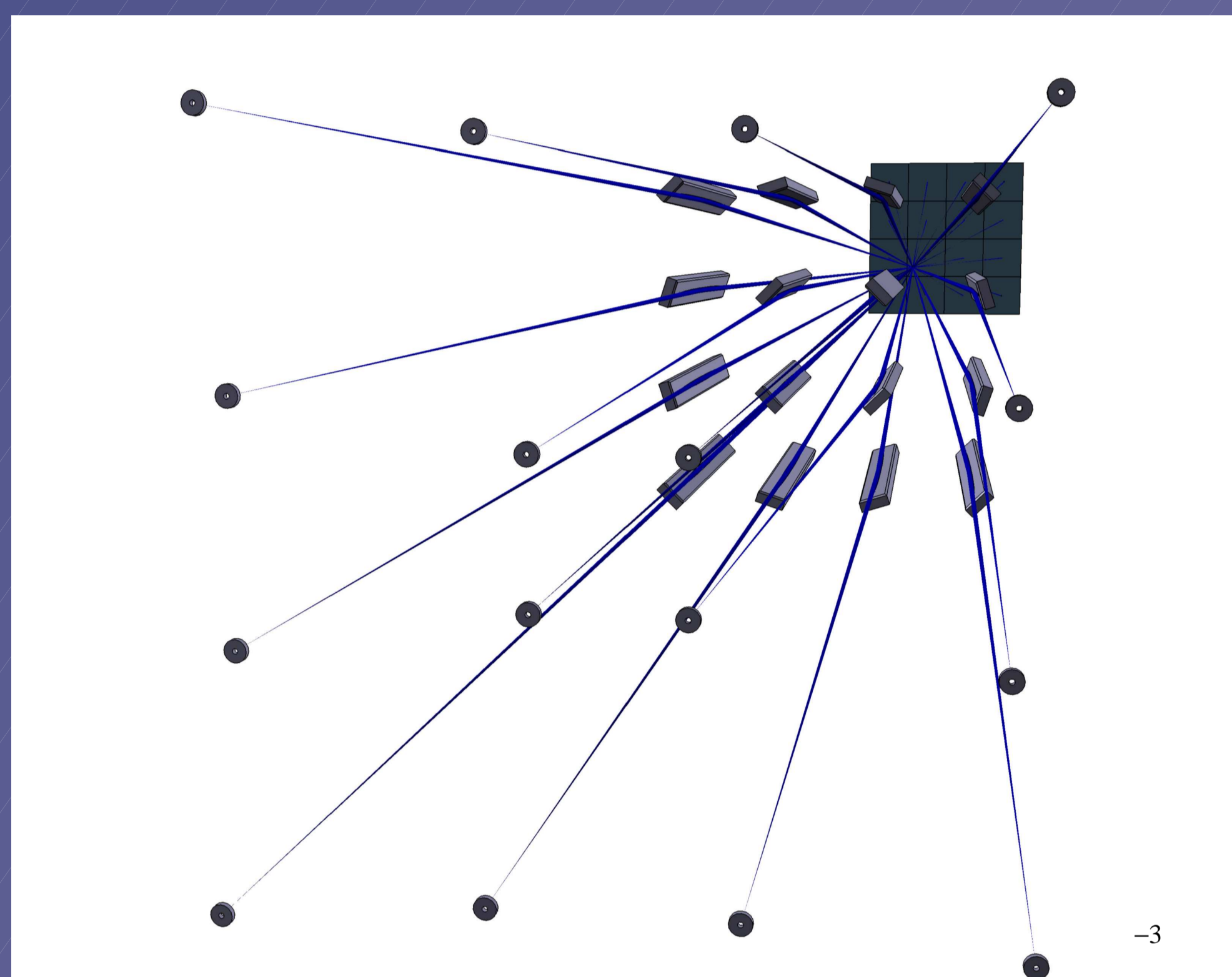
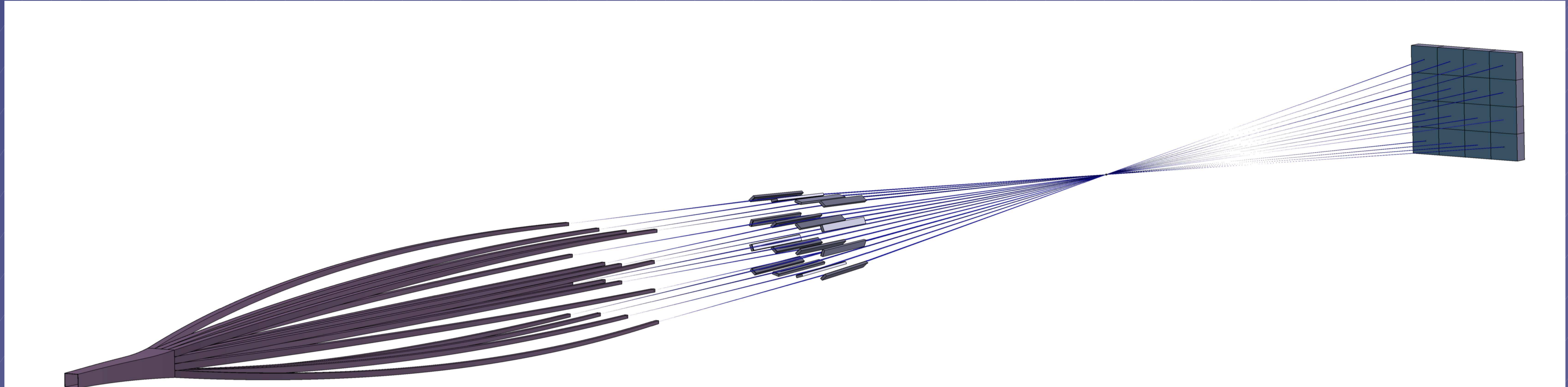
Aims

- accommodate **small sample size**
- maintain acceptable sample illumination
- maintain acceptable scattering vector range and resolution

Basic idea: A. Wiedenmann, R. Gähler, K. Anderson: Multiple Beam SANS
http://www.sns.gov/workshops/Long_Pulse/LPSS_SANS.pdf

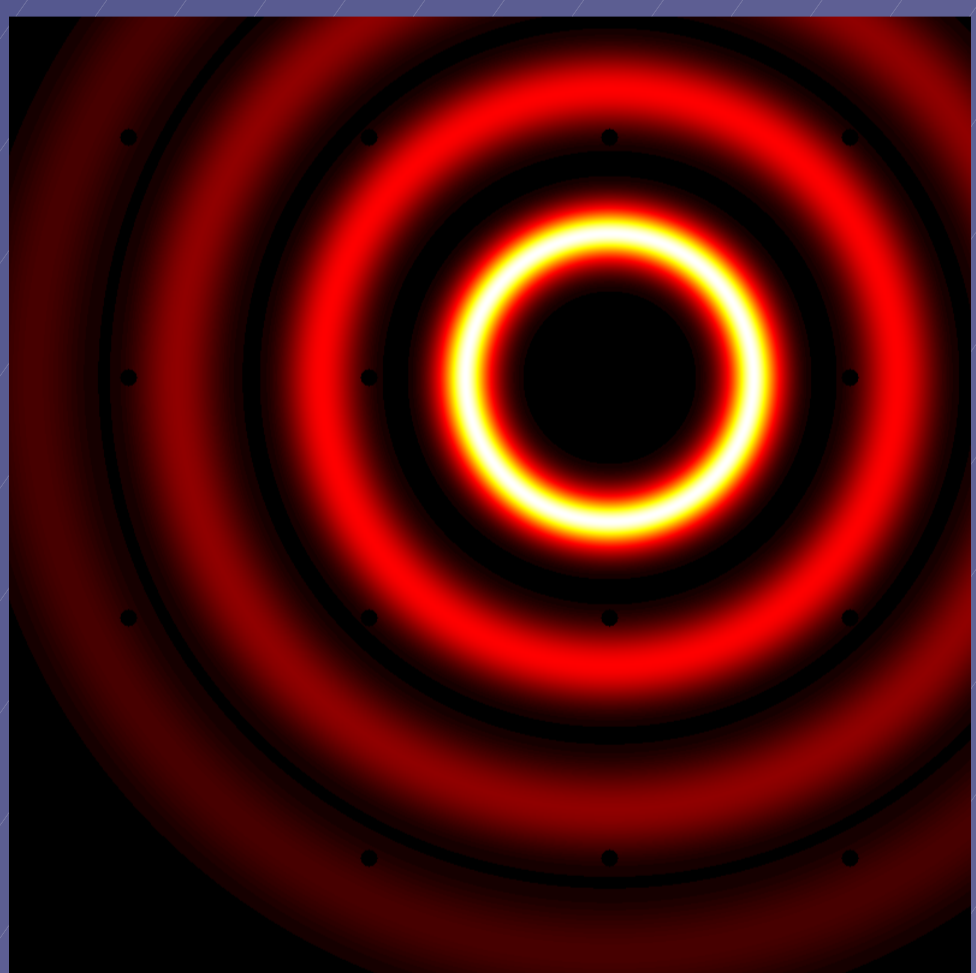
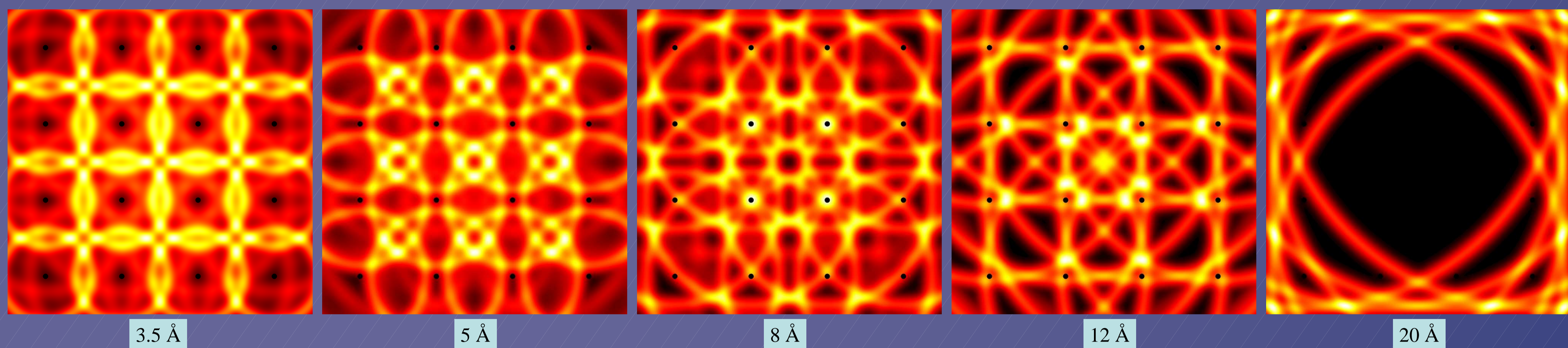
Parameters

- Wavelength range: 3.5 – 25.5 Å
- Number of beams: 16
- Source aperture diameter: 2 mm
- Sample diameter: 3 mm
- Beam footprint on detector (including penumbra): 12 mm
- Sample to detector distance: 4 m
- Detector size: 800 × 800 mm²
- Focusing by true ellipsoidal mirrors
 - half axes: 3500 mm, 80 mm
 - mirror length: 400 mm, width: 10 mm
 - SM coating $m = 4$
- q range: 10⁻³ – 1.3 Å⁻¹
- Transmission: $A\Omega = 8 \cdot 10^{-6}$ cm²sr



Pulsed source mode

Simulated operation (powder diffraction on silver behenate, without incoherent scattering)
 Image separation when overlapped: by numerical fitting.



Reactor mode

Chopper speed: 1140 rpm
 Phase shift between choppers: 22.5°

