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## ***On-Axis Brilliance and On-Axis Flux Tuning Curves for The APS 2.50 nm-rad, 100 mA***

*To L. Moog from R. Dejus, October 15, 2008*

*Comments:*

- 1. Includes  $L=4.8$  m for UA (3.3 cm), U3.0 cm, and U2.7 cm; max y-scale =  $2.0e20$  for brilliance plot; plot is from November 28, 2007.*
- 2. Estimate of effect of magnetic field errors applied to plots with  $E_{max}=60$  keV (flux plots) and  $E_{max}=100$  keV (brilliance plot).*



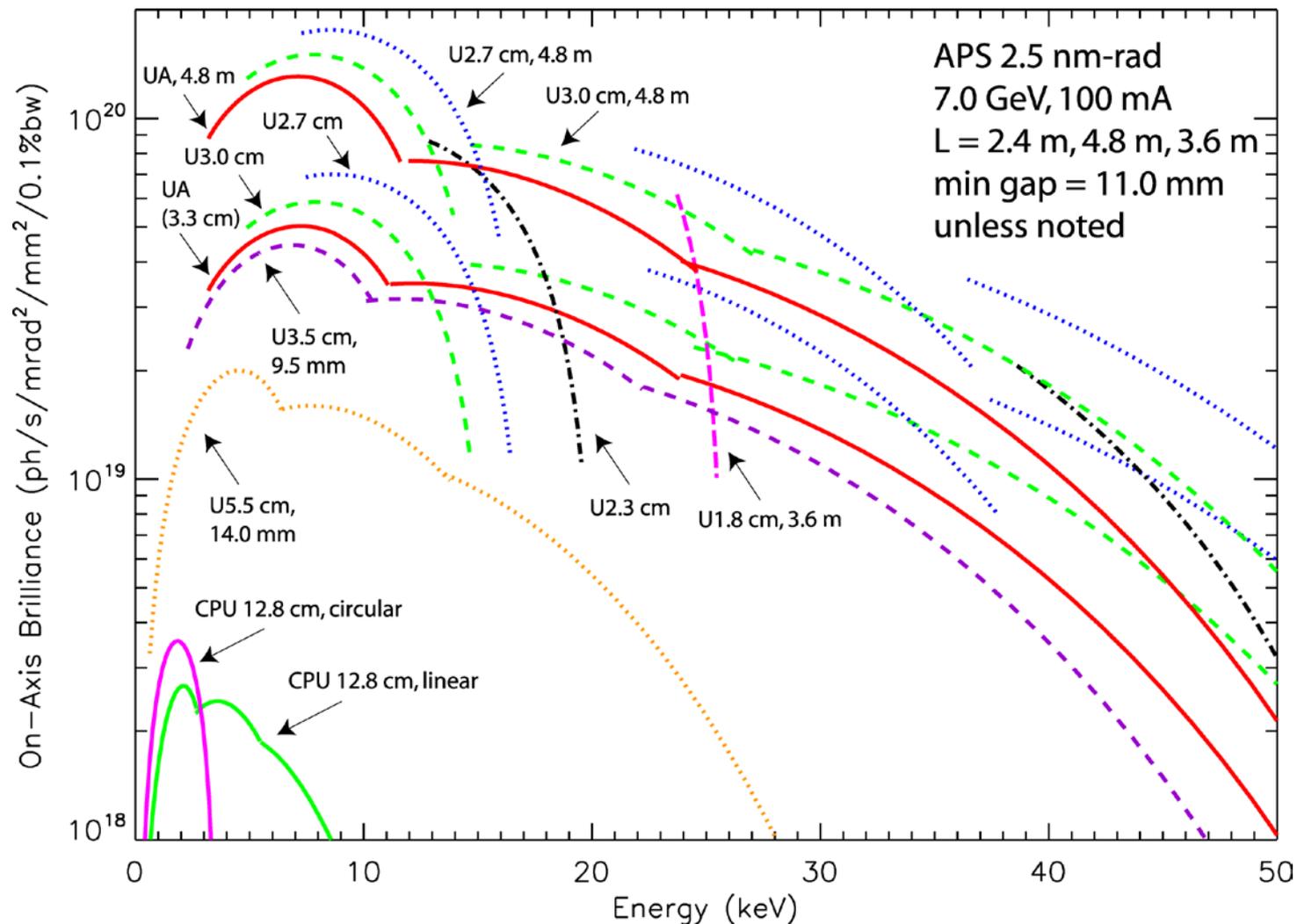
U.S. Department  
of Energy

UChicago ►  
Argonne<sub>LLC</sub>



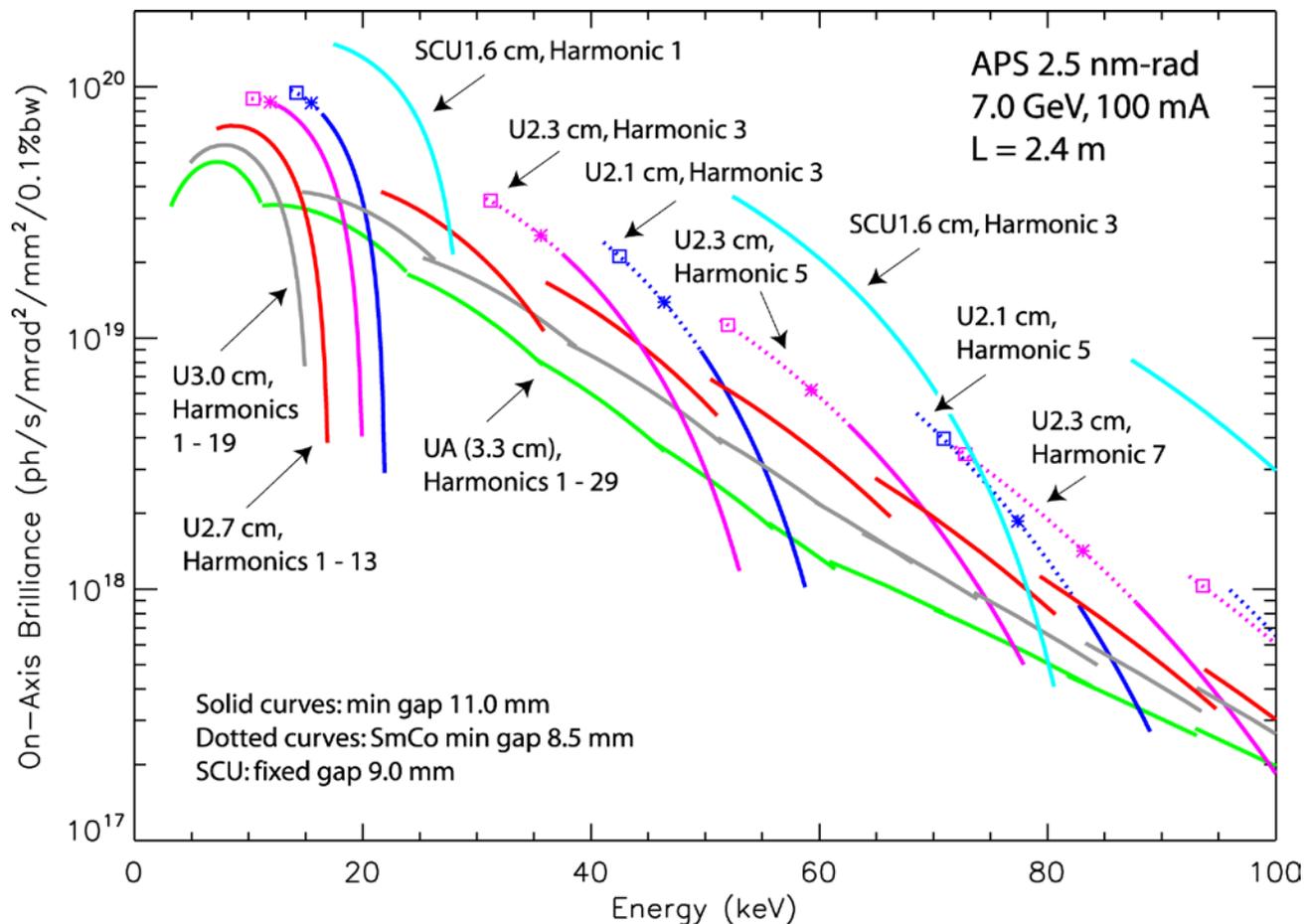
U.S. DEPARTMENT OF ENERGY

# On-Axis Brilliance Tuning Curves for Existing Undulators (overlap removed)



■ Beam energy 7.0 GeV, beam current 100 mA, emittance 2.5 nm-rad, and coupling 1%.

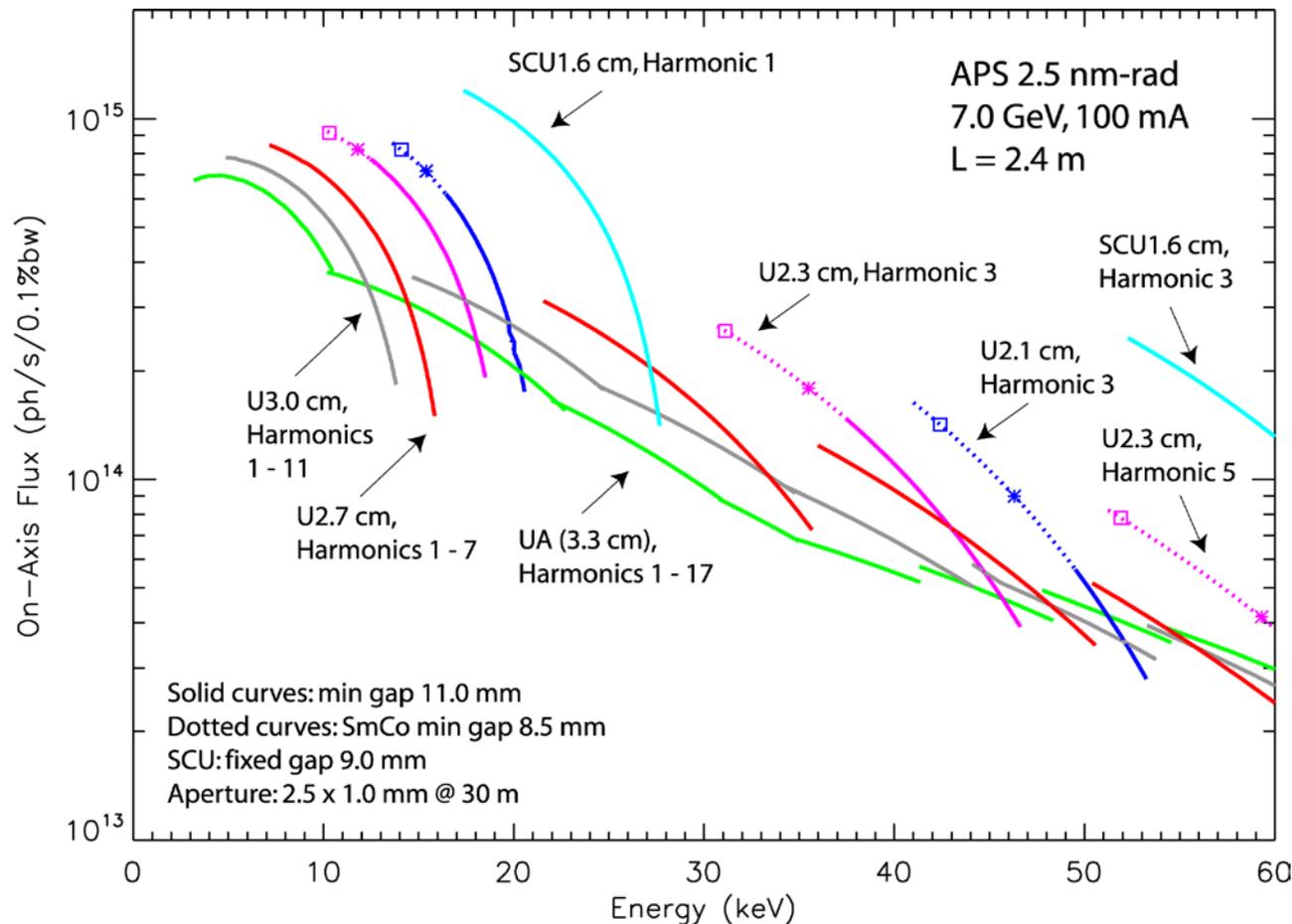
# On-Axis Brilliance Tuning Curves for Existing and New Undulators



- Beam energy 7.0 GeV, beam current 100 mA, emittance 2.5 nm-rad, and coupling 1%.
- Markers at 9.5 mm gap for NdFeB magnets (squares) and SmCo magnets (stars).
- Estimate of reductions due to magnetic field errors applied.

# On-Axis Flux Tuning Curves for Existing and New Undulators

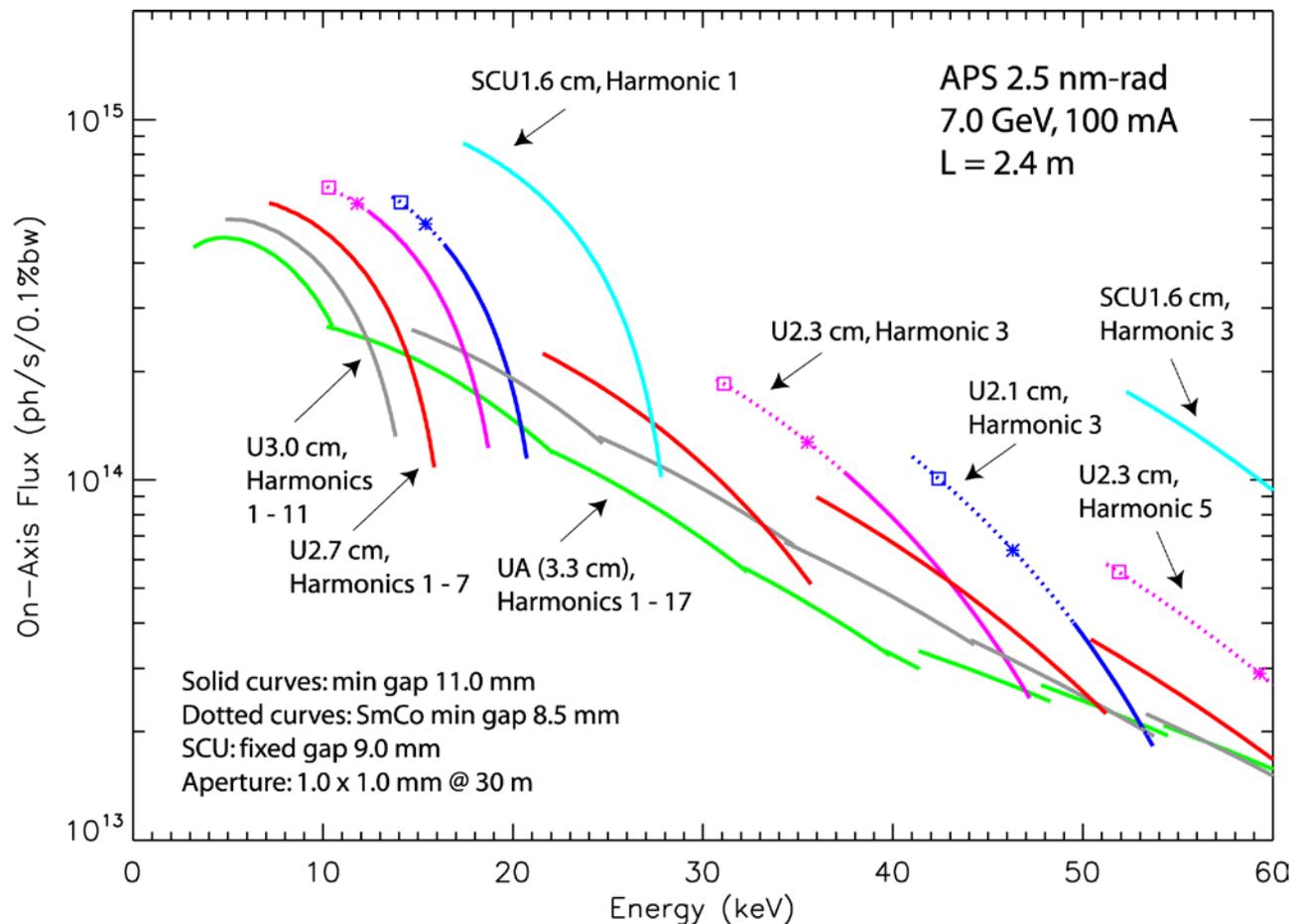
Aperture: 2.5 (h) x 1.0 (v) mm @ 30 m



- Beam energy 7.0 GeV, beam current 100 mA, emittance 2.5 nm-rad, and coupling 1%.
- Markers at 9.5 mm gap for NdFeB magnets (squares) and SmCo magnets (stars).
- Estimate of reductions due to magnetic field errors applied.

# EXTRA: On-Axis Flux Tuning Curves for Existing and New Undulators

Aperture: 1.0 (h) x 1.0 (v) mm @ 30 m



- Beam energy 7.0 GeV, beam current 100 mA, emittance 2.5 nm-rad, and coupling 1%.
- Markers at 9.5 mm gap for NdFeB magnets (squares) and SmCo magnets (stars).
- Estimate of reductions due to magnetic field errors applied.