

COLLOQUIUM

Advanced Photon Source Upgrade Project: The World's Leading Hard X-ray Light Source

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ANL

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The Advanced Photon Source Upgrade (APS-U) Project will transform the APS into the world's brightest hard x-ray lightsource. The heart of the upgrade is a replacement of the existing 3rd generation storage-ring with a 4th generation design based on a multi-bend achromat lattice. The APS-U lattice will deliver a reduction in horizontal emittance of more than a factor of 70 relative to 3rd generation sources. Together with the use of superconducting undulators, APS-U will increase the brightness and coherent x-ray flux by 2 to 3 orders of magnitude relative to today's 3rd generation sources. The technical design and project status will be described.