Magnetic Scattering and Spectroscopy at High Pressures at APS and APS-U

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We describe current capabilities at the Advanced Photon Source for probing the evolution of magnetic order at high pressures using resonant X-ray absorption and scattering techniques in the diamond anvil cell. The complementarity of resonant magnetic scattering and x-ray magnetic circular dichroism for these studies is demonstrated with recent work on compressed beta-Li_2IrO_3, a hyperhoneycomb iridate where spin liquid and dimerized phases appear to compete for the ground state [1-4]. Opportunities in this area presented by the upcoming upgrade of the APS source (APS-U) will be discussed.

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References

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