

Polarized Neutron Diffraction and Spectroscopy: Applications to Quantum Materials

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Monday, March 30, 2026,

Bldg. 8600/ Room C -156

Time	Event	Presenter
8:30 – 9:00	Check-In & Welcome Desk Open - SNS Lobby, Bldg 8600	
9:00 – 9:15	Workshop overview/goals	Ovidiu Garlea
9:15 – 10:00	General Introduction to Neutron Polarization Technique.	Barry Winn
10:00 – 10:15	Coffee Break	
10:15 – 11:00	Understanding Polarization Components for Neutron Scattering Experiments	Barry Winn
11:00 – 11:15	Q & A / Break	
11:15 – 12:00	Polarized neutron diffraction technique (also known as half -polarization/ flipping-difference /flipping-ratio method)	Stuart Calder
12:00 – 13:00	Working Lunch: “A Historical Perspective on Neutron Scattering at ORNL”	Barry Winn
13:00 – 13:45	Science highlights from polarized neutron diffraction at POWDER instrument	Stuart Calder
13:45 – 14:00	Q & A / Break	
14:00 – 14:45	Science examples from polarized neutron diffraction studies at DEMAND	Yiqing Hao/ Huibo Cao
14:45 – 15:00	Coffee Break	
15:00 – 15:45	Installation and overview of CrysPy program for hands-on exercise on polarized diffraction data	Stuart Calder/ Yiqing Hao/ Huibo Cao
15:45 – 17:30	HFIR Tour	

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Tuesday, March 31, 2026,

Bldg. 8600/ Room C -156

Time	Event	Presenter
8:30 – 9:00	Follow-up discussion and Q&A	
9:00 – 10:30	Hands-on on polarized powder data analysis. Analysis of flipping difference data using CrysPy	Stuart Calder
10:30 – 10:45	Coffee Break	
10:45– 12:00	Hands-on on polarized powder data analysis. Analysis of flipping ratios data with CrysPy	Yiqing Hao/ Huibo Cao
12:00 – 13:00	Working Lunch: “Overview of polarization capabilities at HFIR and SNS”	Lowell Crow
13:00 – 14:00	Linear- polarization analysis using triple axis spectrometers and PTAX science highlights	Masaaki Matsuda
14:00– 14:15	Q & A / Break	
14:15– 15:00	Neutron polarization analysis on multi-detector instruments /XYZ polarization analysis	Ovidiu Garlea
15:00 – 15:15	Coffee Break	
15:15– 16:15	Science opportunities using the neutron polarization analysis at HYSPEC	Ovidiu Garlea
16:15 – 17:00	Introduction to Spinvert and Spinteract for analysis of diffuse magnetic scattering	Joe Paddison
17:00 – 18:00	Tour of HYSPEC / SNS	

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Wednesday, April 1, 2026,

Bldg. 8600/ Room C -156

Time	Event	Presenter
8:30 – 9:00	Follow-up discussion and Q&A	
9:00 – 9:15	Overview of HYSPEC hands-on tutorial	Ovidiu Garlea
9:15 – 10:45	Hands-on polarized neutron data from HYSPEC Part1: Data reduction and visualization using SHIVER	Andrei Savici
10:45– 11:00	Coffee Break	
11:00 – 12:00	Hands-on polarized neutron data from HYSPEC Part2: Analysis of diffuse magnetic scattering	Joe Paddison
12:00 – 13:00	Working Lunch: “Practical consideration for planning and writing proposals for polarized measurements”	Masaaki Matsuda/ Ovi Garlea
13:00 - 14:00	Introduction to Spherical Neutron Polarimetry (SNP) technique and its application to condensed matter physics	Navid Qureshi
14:00– 14:15	Q & A / Break	
14:15 - 15:15	Development of Spherical Neutron Polarimetry at HFIR and SNS and science highlights	Peter Jiang
15:15 – 15:30	Coffee Break	
15:30 – 17:30	Introduction to Mag2Pol software and hands-on analysis of SNP data	Navid Qureshi

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Thursday, April 2, 2026

Bldg. 8600/ Room C -156

Time	Event	Presenter
8:30 – 9:00	Follow-up discussion and Q&A	
9:00 – 9:45	Magnetic-PDF for total scattering analysis	Raju Baral
9:45– 10:00	Q & A / Break	
10:00 – 10:45	Neutron Spin-Echo technique: Fundamentals and applications to quantum materials.	Jon Leiner
10:45 – 11:00	Coffee Break	
11:00 – 12:00	Ultrahigh-resolution diffraction and spectroscopy using superconducting Wollaston prisms at PTAX	Fankang Li
12:00 – 13:00	Working Lunch: “Open discussion, workshop summary & survey”	Ovi Garlea/ Barry Winn
13:00 - 13:45	Polarization capabilities at neutron facilities in Europe	Navid Qureshi
13:45– 14:00	Q & A / Break	
14:00 - 15:00	Demonstration of Mag2Pol software for magnetic structures analysis from powder and single crystal data (Part 1)	Navid Qureshi
15:00 – 15:15	Coffee Break	
15:15 - 16:30	Demonstration of Mag2Pol software for magnetic structures analysis from powder and single crystal data. (Part 2)	Navid Qureshi