APS/IIT Summer XAFS School

Now accepting applications

July 7-12, 2019
Illinois Institute of Technology
Department of Physics
Robert A. Pritzker Science Center
31st and State St.
Chicago, IL 60616

ILLINOIS INSTITUTE OF TECHNOLOGY

This XAFS summer school is an extended version of the summer school offered previously at IIT in Chicago in collaboration with the Advanced Photon Source. It will again be at IIT in Chicago, but will run Sunday-Friday. Course material will cover fundamental and practical aspects of X-ray Absorption Fine Structure Spectroscopy: basics, sample preparation, experiment, theory, data analysis.

One day of hands-on experiments will be carried out by participants at a handful of APS beamlines, followed by a guided data analysis laboratory using Athena/iFEFFIT/Larch family of programs. Several computers will be available for those participants attending without their own laptops, but it's best to bring your own. The target audience is graduate students, postdocs, and experienced scientists who are new to XAFS and want to use it in their own research. Space is available for up to 40 students.

Instructors include: Steve Heald (ANL), Matt Newville (UChicago), Bruce Bunker (U. Notre Dame), Bhoopesh Mishra (IIT), Carlo Segre (IIT), Grant Bunker (IIT), and other experienced XAFS researchers.

The cost of the course is $600 USD, which covers most but not all meals via an IIT meal card. Participants will be responsible for their own housing (available on and off IIT campus) and travel to/from their home institutions. IIT is readily accessible by car, cab, and CTA train from O'Hare and Midway airports. Free time will be available most evenings including dinner time for participants to visit Chicago attractions such as Grant Park, the Loop, Millennium Park, Lake Michigan; music, architecture, art, theater; Chinatown, White Sox, Field Museum, Shedd Aquarium, Adler Planetarium, and Navy Pier, and numerous restaurants and pubs.

For more information, please email bunker@iit.edu with subject line "2019 XAFS School"

Schedule Outline (subject to modification)

S1: Lecture: Introduction and overview of XAFS, history, applications
S2: Lecture: Theory: Basic theory and interpretation of EXAFS and XANES
S3: Lecture: Experimental: synchrotron radiation, beamlines, detectors
S4: Lecture: Experimental: design, choosing measurement modes, sample geometry, sample preparation methods
M1-M4: Lab: prepare and characterize samples
T1-4: Lab: Measurements at Advanced Photon Source, all day
W1: Lecture: Data Analysis: Data reduction methods, Fourier methods
W2: Lecture: Data Analysis: Data models, nonlinear fitting, confidence intervals
W3-W4: Lab: hands-on reduction and analysis of XAFS data
R1: Lecture: Theory: Disordered systems, Linear combinations, PCA
R2-R4: Lab: hands-on reduction and analysis of XAFS data continued
F1: Lecture: Theory: Calculation of Theoretical Spectra, approaches
F2-F3: Lab: Data Analysis continued/Consult on special problems
F4: adjourn

Outline Schedule	Sun* 7/7	Mon 7/8	Tue 7/9	Wed 7/10	Thurs 7/11	Friday 7/12
8:00-9:00 AM	Registration	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast
9:00-10:15 AM	S1	M1	T1->ANL	W1	R1	F1
10:15-10:45 AM	coffee/tea	coffee/tea	–	coffee/tea	coffee/tea	coffee/tea
10:45 AM -12:00	S2	M2	T2	W2	R2	F2
12:00-1:30 PM	S3pt1/ Lunch/	Lunch	–	Lunch	Lunch	Lunch
1:30-2:45 PM	S3pt2	M3	T3	W3	R3	F3
2:45-3:15 PM	coffee/tea	coffee/tea	–	coffee/tea	coffee/tea	coffee/tea
3:15-4:30 PM	S4	M4	T4->IIT	W4	R4	Adjourn
6:00 PM	Dinner	Dinner	Dinner	Dinner	Dinner	—
Evenings	Open	Open	Open	Open	Open	—

*Lunch served 1:00-2:00pm Sunday, S3 session may be split over lunch break, subject to change