

The 2018 ACERT Hands-On Tutorial Workshop on Denoising ESR Signals Via Wavelets



July 30-31, 2018
Cornell University
Ithaca, NY

ACERT is pleased to announce a hands-on workshop on a set of revolutionary new methods for denoising experimental signals in ESR and related ESR techniques. These methods use signal processing based on wavelets rather than Fourier transforms or signal averaging; and they promise to be game-changing: we have been able to reduce data acquisition times for ESR experiments by one to two orders of magnitude, without a corresponding loss of accuracy.

To help disseminate these methods to the ESR community, we will be conducting a hands-on workshop on July 30-31 on the Cornell University campus, ACERT's home.

Features:

Day One:

- Interactive Lectures on the Theory of Wavelet-Based Denoising and the Algorithms Developed for It
- Talks on Applications to Several Biophysical Methods (cw-ESR, DEER, ENDOR)

Includes Specific Case Studies by ACERT Collaborators

Real-Life Examples of How Researchers Apply the Methods
to Address Their Experimental Needs

Guest Speakers include:

Prof. Songi Han, Dept. of Chemistry & Biochemistry, University of California Santa Barbara

Prof. Sandra Eaton, Dept. of Chemistry & Biochemistry, University of Denver

Dr. Igor Dikiy, NY Structural Biology Center, NYC

Prof. Brian Crane, Dept. of Chemistry & Chemical Biology, Cornell University

ACERT Speakers include:

Methods

Prof. Jack Freed

Madhur Srivastava

Applications

Dr. Peter Borbat

Dr. Boris Dzikovski

Day Two:

- **“Bring Your Own Dataset” TUTORIAL WORKSHOP**
How to use our code on your own real-life datasets

Description of Workshop:

Day One has interactive lectures on the theory and practice of wavelet denoising. It begins with a talk on the principles of wavelet transforms, and how they differ from Fourier transforms. This will be followed by talks describing the denoising algorithms developed at ACERT, so that workshop participants will understand their theoretical basis and how they provide major improvements over signal-averaging. These talks are interactive: participants are encouraged to interrupt the speakers with requests for clarification.

The second half of Day One is another series of interactive talks, first about how the denoising methods are applied to various biophysical methods—cw-ESR, DEER, and ENDOR—followed by a series of case study talks by several ACERT collaborators. These researchers will provide “real-life” discussions of how they worked through the process: how they were able to follow through on applying the denoising methods, and what they were able to accomplish regarding their own research needs that they had not been able to accomplish earlier.

Day Two is the hands-on day. During the morning session, participants will work through how to denoise sample datasets that we will provide—datasets generated by cw-ESR, DEER, ENDOR, and ESRI. The new software will be provided. ACERT staff will provide assistance on the user interface to the algorithms. During the afternoon session, participants will then be encouraged to process a dataset that they bring with them. (Please also bring a laptop.) Hence, the “BYOD” subtitle for the workshop. In addition, participants will have the opportunity to see denoising during real-time data acquisition, by visiting our spectrometer facilities.

Registration:

Prices until July 13, 2018:

REGULAR: US\$ 500.00

STUDENT/POSTDOC: US\$ 300.00

ADDITIONAL PERSON: US \$150.00

Rates for workshop attendees after July 13 = \$550 regular / \$350 students & postdocs. (Rate for accompanying persons does not change.) Registration includes breakfast/lunch/coffee breaks both days, and dinner Monday.

Payment can be made by check drawn in \$USD or by credit card via a secure online portal.

Mailing Address:

ACERT Denoising Workshop
B28 Baker Chem Lab
Department of Chemistry & Chemical Biology
Cornell University
Ithaca, NY 14853
USA

Portal for Credit Card Payment/Registration:

[ACERT Denoising Workshop Credit Card Registration](#)

Bank Transfer:

If your institution requires direct payment for conference registration by direct bank transfer, please direct inquiries for instructions to ACERT via email at acert@cornell.edu. Please make sure to include the phrase “Denoising Workshop” in your subject line to facilitate matters.

Housing:

Workshop Hotel:

A block of rooms has been set aside for workshop attendees at the Best Western University Inn on Ellis Hollow Rd., at a reduced rate of \$119/night for the period July 29-31. (The workshop rate is unavailable prior to July 29 due to other events; check-in begins 3pm and checkout time is noon.) Complimentary shuttle service to campus will be available 7am-11pm. You can use the following link to book directly (must book no later than July 13 to obtain the reduced rate):

[ACERTWORKSHOP_BWUnivInnIthaca](#)

Use the promotional code ACERTWORKSHOP to obtain the reduced room rate.

You can also contact the hotel directly:

Best Western University Inn
1020 Ellis Hollow Rd.
Ithaca, NY 14850
Direct Ph.#: +1 (607)-272-6100

Student Housing:

To encourage beginning researchers, we have reserved some lower-cost on-campus housing in townhouse dorms for graduate students and postdoctoral associates. These are suites of two bedrooms (2 beds each) sharing a common bath.

Single-occupancy: \$90/night

Double occupancy: \$65/night

A total of 30 beds are available for July 29-31; as with the University Inn, early arrivals are not available due to other conferences. (Check-in begins 2pm; checkout time is 10am.) Advance-pay parking is available separately; see “Parking” below. Register for townhouse housing at the following link no later than July 13:

[ACERT Workshop Student Town Housing](#)

Additional hotels nearby include but are not limited to:

Statler Hotel
130 Statler Dr.
Cornell University
+1 (607) 254-2500
+1 (800) 541-2501

Hotel Ithaca
222 S. Cayuga St.
Ithaca, NY 14850
+1 (607)-272-1000

Ramada Inn
2310 N Triphammer Rd
Ithaca, NY 14850
+1 (607)-257-3100

There are no reserved blocks of rooms at these venues—regular prices and availability hold.

Please contact the ACERT Center Office (see below, “Questions?”) for other lodging options.

Parking:

Students and postdocs staying in the townhouses can purchase permits for a lot across the street by using the following link: <https://cornell.clickandpark.com/event>.

This lot is also available for others wishing to park on campus. Please use the link above.

Two additional lots with per-diem parking (payable by mobile device), closer to the workshop site but with somewhat higher rates, are also available. Please inquire at registration or at the ACERT office, below.

Travel to Ithaca:

The Ithaca airport is served by Delta, American, and United, with direct flights to Detroit, Philadelphia, and Newark. Most hotels in Ithaca, including the Best Western, offer complimentary shuttle service to/from the Ithaca airport. The next closest major airport is Syracuse Hancock International Airport, just over one hour’s drive away. Rental cars can be booked via [Syracuse Airport Rental Car Options](#) or you can use one of several scheduled trips by [Ithaca Airline Limousine](#). Maps and driving directions are available at the [workshop page](#) on the [ACERT website](#).

Questions?

Please contact Art Samplaski, ACERT Administrative Manager, either by phone at +1 (607) 255-4632 or by email at acert@cornell.edu. For email, please make sure to include the phrase “Denosing Workshop” in your subject line to facilitate matters.