

The fifth edition of the hands-on workshop on 2D Electron Crystallography

2DX Workshop 2016

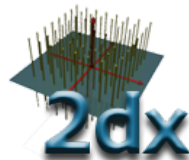
August 22-27 2016 / C-CINA, Biozentrum, University of Basel

The hands-on workshop on the processing of images from cryo-electron microscopy of 2D crystals of membrane proteins (2D electron crystallography) will provide the theoretical background and practical applications in advanced image processing algorithms. The workshop will use the 2dx software system and will feature theoretical lectures, hands-on practicals, and give the opportunity to process your own datasets.

ORGANIZERS

Nikhil Biyani, Ricardo Righetto, Robert McLeod, Karen Bergmann, Henning Stahlberg

C-CINA



BIOZENTRUM
Universität Basel
The Center for
Molecular Life Sciences

AGENDA

Basic Principles of 2D Electron Crystallography

1. Introduction to 2D Electron Crystallography
2. Basics of Electron Microscopy of 2D Crystals
3. Introduction to 2DX
4. Drift correction using ZORRO

Basic Image Processing with 2DX

1. Determination of the defocus, crystal tilt geometry, crystal lattice
2. Crystal Unbending - including movie-mode drift correction of individual unit cells in dose-fractionated image series
3. 2D merging and 3D merging with reconstruction via weighted back projection
4. Automation of the processing pipeline

Advanced topics in image Processing with 2DX

1. Approaches for a partial reconstruction of amplitudes and phases inside of the missing cone
2. Processing of 2D crystal unit cells with RELION and FREALIGN, under exploitation of neighborhood correlation of certain image parameters
3. Advanced usage of the 2DX backend library
4. Preparation of final results with quantitative description of statistical values (e.g., resolution) for export to databases (EMDB).

Applications

PROGRAM

The initial dates are as below:

Arrival	August 22, 2016
Lectures & Workshop	August 23-26, 2016
Departure	August 27, 2016

A detailed program will be communicated shortly.

LOCATION

The workshop will take place at **C-CINA, Biozentrum, University of Basel** in Basel, Switzerland. More details about the specific locations of the lectures and practicals would be communicated later.

REGISTRATION

The registration is open and can be done online with this [Link](#).

1. The workshop will cost a fee of CHF 250 for academic users and CHF 1000 for industry users, which covers meals during the workshop. Travel and lodging has to be covered by the participants.
2. We recommend that participants bring their own portable computer with them (OSX or Linux), onto which we can install the image processing software and practical datasets at the beginning of the workshop.
3. The last date to apply is 30th June 2016.

MORE DETAILS

Visit our website: <http://www.2dx.unibas.ch/workshop/2016>