

Day 1: Deconvolution, Data handling, and Visualization

09:30 Welcome + Installation of the Huygens software

09:40 -10:50 Introduction

General introduction to microscopy [Image Formation](#) and [Image Restoration](#)

- Light/Wave properties
- Deconvolution
- Point spread function - Optical Transfer Function

10:50 - 11:10 Coffee break

11:10 - 12:10 Huygens and Batch processing

Preferences & Settings in Huygens

How to start a deconvolution job in [Huygens \(Professional\)](#), and how to schedule multiple deconvolution tasks with the [Batch Processor](#)

HANDS-ON

12:10 -12:30 Converting and rescaling of image data

How to prepare images in Huygens, treat large image data, converting image dimensions, scaling, and [File formats](#)

12:30 - 13:20 Lunch Break

13:20 - 13:40 Visualization Part I

[Twin Slicer](#) and [OrthoSlicer](#) fine tricks

HANDS-ON

13:40 - 14:10 Visualization Part II

Huygens [MIP](#) and [SEF](#) renderers

HANDS-ON: [Huygens Surface renderer](#) and [Movie Maker](#)

14:10 - 15:20 General advice and Hands-on

What algorithm to choose, differences between microscope types, optimal parameter settings, deconvolution artifacts and how to prevent them

HANDS-ON

15:20 - 15:40 PSF distiller

Distilling an experimental PSF from bead images, PSF quality

HANDS-ON

15:40 - 16:00 Coffee Break

16:00 - 16:05 GPU acceleration: what is supported?

16:05 - 17:30 STED & Airyscan processing

HANDS-ON

Day 2: Huygens Restoration and Analysis

09:30 – 10:15 Acquisition Pitfalls

How to deal with image distortions and [acquisition pitfalls](#)

Issues that will be addressed are for example: noise, blurring, bleaching, hot-pixels, spherical aberration, bleedthrough, drift.

10:15 – 10:30 Chromatic Aberration Corrector

Correcting chromatic aberration with the [Chromatic Aberration Corrector](#)

HANDS-ON

10:30 – 10:55 Object Stabilizer

Correcting unwanted movement and vibration with the [Object Stabilizer](#)

HANDS-ON

10:55 – 11:10 Coffee break

11:10 – 11:30 Stitcher

Automatic vignetting, deconvolution and stitching in one workflow.

HANDS-ON

11:30 – 11:50 Quiz

Find and fix imaging issues

HANDS-ON

11:50 – 12:15 Object Tracker

How to detect and analyze tracks of moving objects with the [Object Tracker](#)

HANDS-ON

12:15 – 12:50 Colocalization Analyzer

[Colocalization Analyzer](#)

HANDS-ON

12:50 – 13:40 Lunch break

13:40 – 14:15 Object Analyzer

Analyzing your microscopy images with the [Object Analyzer](#)

HANDS-ON

14:15 – 14:30 Coffee break

14:30 – 14:50 Light-Sheet deconvolution & Fusion Wizard

PRESENTATION

14:50 – 16:30 Working with your own data or demo images

HANDS-ON