Peter Willendrup

Establishing the learning goals, a look at the programme

Learning goals:

1. Learn McStas basics
2. Build and operate simple instrument models, source + optics + sample + detector
3. Learn basics of instrument-optimisation for your type of instrument
4. Add Mantid / NeXus capabilities
5. Get a better idea of what you want to do with McStas, how to do it, how to get help
6. Get up-to-speed with latest developments and advanced features

⇨ Enable your independent work with McStas

School programme

	April 13th Beginners McStas	Time (GMT)	April 14th Instrument design	Time (GMT)	April 15th Advanced
9:00-10:00	15 min Welcome + setting learning goals 15 min McStas live demo 30 min McStas intro + general concepts **Responsible: Peter**	9:00-10:00	30 min Polarisation 30 min tips and tricks for optimising your simulation **Responsibles: Peter + Erik**	9:00-10:00	60 min Presentation and demo: Union **Responsible: Mads Bertelsen**
10:00-10:15	Break	10:00-10:15	Break	10:00-10:15	Break
10:15-11:15	60 min Components basics: 20 min Sources, monitors and slits 40 "Build-along", guided exercise: Create simple instrument with source / det **Responsible: Erik**	10:15-11:15	Break out groups 1 - theoretical basis of optim: - Diffraction - Spectroscopy - SANS & reflectivity **Responsibles: Paul, Rob & Rob**	10:15-11:15	60 min Presentation and demo: Guide_bot **Responsible: Mads Bertelsen**
11:15-11:30	Break	11:15-11:30	Break	11:15-11:30	Break
11:30-12:30	60min Guides and gravity: 20 min presentation 40 min practical **Responsible: Peter**	11:30-12:30	Break out groups 2 - work on own instrument: - Diffraction - Spectroscopy - SANS & reflectivity **Session leads: Paul, Rob & Rob**	11:30-12:30	60 min Instrument simulation on GPU: 30 min RAMP 30 min McStas GPU support and 2.x vs 3.0 **Responsibles: Gino & Peter**
12:30-13:30	Lunch break	12:30-13:30	Lunch break	12:30-13:30	Lunch break
13:30-14:30	60-min Choppers and other rotating optics: 20 min presentation 40 min practical **Responsible: Erik**	13:30-14:30	40 min McStas -> Mantid, NeXus: 20 min presentation 20 min demo **Responsible: Peter**	13:30-14:30	Writing your own component /move to 3.0 Break out: a) Build-along, my first component **(Erik)** b) Convert your 2.x codes to 3.0 **(Peter)**
14:30-14:45	Break	14:30-14:45	Break	14:30-14:45	Break
14:45-15:45	60-min Samples: 40 min presentation 20 min "Homework assignment" **Responsibles: Peter + Erik**	14:45-15:45	60 min Practical / "Homework assignment" View instrument and work w/output in Mantid **Session leads: Paul, Rob & Rob**	14:45-15:45	30 min Q&A, 30 min feedback, continuing from here

School programme - day 1

	April 13th Beginners McStas
9:00-10:00	15 min Welcome + setting learning goals 15 min McStas live demo 30 min McStas intro + general concepts **Responsible: Peter**
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Intro lecture, general principles

Lectures + “recipe” exercises

In “cookbook” sections, think ahead toward your own project:

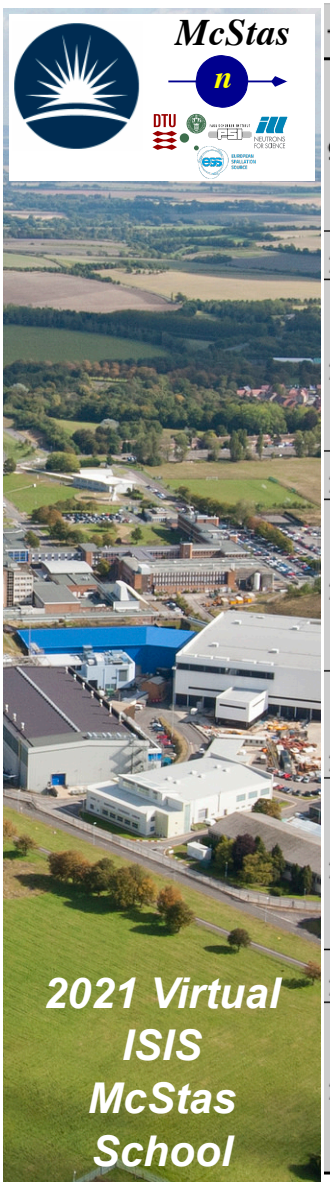
* Which neutron source
* What optics
* What sample

- K.I.S.S. for now

Sample-lecture, including “advanced McStas grammar…

+ “homework”:
Start off / work on your own instrument-project

School programme - day 2



Time (GMT)	April 14th Instrument design
9:00-10:00	30 min Polarisation 30 min tips and tricks for optimising your simulation **Responsibles: Peter + Erik**
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10:15-11:15	Break out groups 1 - theoretical basis of optim: - Diffraction - Spectroscopy - SANS & reflectivity **Responsibles: Paul, Rob & Rob**
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13:30-14:30	40 min McStas -> Mantid, NeXus: 20 min presentation 20 min demo **Responsible: Peter**
14:30-14:45	Break
14:45-15:45	60 min Practical / "Homework assignment" View instrument and work w/output in Mantid **Session leads: Paul, Rob & Rob**

Lectures on polarisation and instrument optimisation technicals

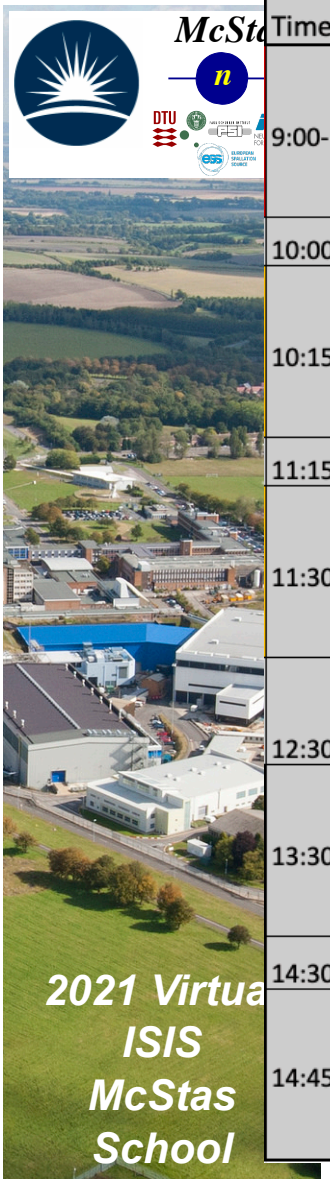
Discipline-specific parallel-sessions + work-sessions.

Continue on “homework”

Mantid-howto, lecture and demo

Add Mantid backend to your “homework” - or simply continue on it.

School programme - day 3, fancy-fancy “new stuff”



Time (GMT)	April 15th Advanced
9:00-10:00	60 min Presentation and demo: Union **Responsible: Mads Bertelsen**
10:00-10:15	Break
10:15-11:15	60 min Presentation and demo: Guide_bot **Responsible: Mads Bertelsen**
11:15-11:30	Break
11:30-12:30	60 min Instrument simulation on GPU: 30 min RAMP 30 min McStas GPU support and 2.x vs 3.0 **Responsibles: Gino & Peter**
12:30-13:30	Lunch break
13:30-14:30	Writing your own component /move to 3.0 Break out: a) Build-along, my first component **(Erik)** b) Convert your 2.x codes to 3.0 **(Peter)**
14:30-14:45	Break
14:45-15:45	30 min Q&A, 30 min feedback, continuing from here

Lecture:
Union subsystem - sample environments and backgrounds…

Lecture:
Guide_bot, guide optimisation “robot”

Lectures, speed-up your future:

Using GPU’s with RAMP or McStas 3

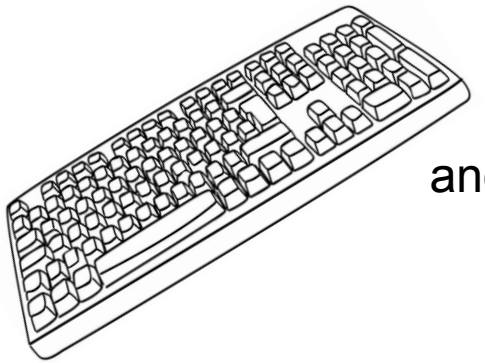
2 x breakouts:
a) Write your first component
b) Port your instrument / component to McStas 3

Continue “homework"
Give us feedback
Ask your last in-school questions

For the exercise-based work-sessions

- You will benefit from working in pairs, 2 > 1

- Take turns being the “coder”
  (use sharing-feature of
  the IDAaaS system)



and the “parallel processor”

Let’s get to it!