



CA 15209 European Network on NMR Relaxometry (EURELAX)

Training School: NMR relaxometry data analysis: theory and software

Location: Department of Physics, University of Pavia, Via Bassi 6, Pavia (Italy)

Dates: 18.02.2019 - 22.02.2019

Aim of school: Bring together relaxometry and FFC relaxometry researchers to discuss the state of the art of current software to use for data elaboration and analysis and possibilities to improve the available software. The training school will also include some teaching and hands-on sessions on use of some relaxometry software and how to apply these to get the most out of relaxometry data. The training school is aimed in particular at new students to relaxometry to teach them quickly how to work with relaxometry data.

List of trainers and affiliations

Danuta Kruk, University Warmia & Mazury in Olzstyn, Poland (COST action Chair)
Ian Postuma, INFN - Pavia, Italy
Villiam Bortolotti, Università di Bologna, Italy
Giacomo Galuppini, Università degli studi di Pavia, Italy
Lionel Broche, University of Aberdeen, UK
Manuel Petit, INSERM, France (via remote connection)
Pedro Sebastião, Universidade de Lisboa, Portugal
Giacomo Parigi, CERM, Università degli studi Firenze, Italy
Pascal Fries, CEA, France

Organizing committee

Danuta Kruk, University Warmia & Mazury in Olzstyn, Poland (COST action Chair)
Alessandro Lascialfari, Università degli studi di Milano, Italy
Manuel Mariani, Università degli studi di Pavia, Italy
Gianni Ferrante, Stelar Srl, Italy
Rebecca Steele, Stelar Srl, Italy

Local organization

Pietro Carretta (Uni Pavia)
Giacomo Prando (Uni Pavia)
Francesca Brero (Uni Pavia)
Lisa Rinaldi (Uni Pavia)
Marco Moscardini (Uni Pavia)

Manuel Mariani (Uni Pavia)
Linda Bianchini (Uni Milano)
Matteo Avolio (Uni Pavia)
Davide Cicolari (Uni Pavia)

General information for participants

General information on travel and accommodation can be found on the website: http://users.unimi.it/lascialfari/2_Train_Sch_PV.htm

Please note that coffee break refreshments will be provided by the local organizers of the training school.

Lunch will not be provided, however the university cafeteria is across the road from the department of physics, where the school is being held and participants can choose to go there for lunch or any other bar/restaurant in the vicinity. Participants who are able to claim reimbursement from COST should make sure they remember to ask for a receipt ("ricevuta" in Italian) for lunches.

A wine party will be offered by Stelar Srl on the evening of Tuesday 19th February evening and a social dinner is planned for the evening of Wednesday 20th February (details to be given).

TRAINING SCHOOL PROGRAM

DAY 1 – MONDAY 18th FEBRUARY

08.00-09.00	REGISTRATION
09.00-09.30	Welcome introduction and practical instructions to participants - <i>COST action Chair, Danuta Kruk & local organizers, Rebecca Steele & Manuel Mariani</i>
09.30-10.30	Introduction to the theme and problems intended to be resolved by this software training school; A brief overview of some basic programs used by researchers for data elaboration (e.g. Matlab, Python, Fortran/C++, Origin, etc. details of these programs will be studied during the course of the school) and some of the main problems encountered when elaborating relaxation data - <i>Danuta Kruk</i>
10.30-10.50	COFFEE BREAK
10.50-12.50	Introduction to Python basics for use with relaxometry data including teaching session with a case study - <i>Ian Posthuma</i>
12.50-14.00	LUNCH
14.00-16.00	Presentation of UPENWIN software, general uses, advantages and limitations - <i>Villiam Bortolotti</i>
16.00-16.30	COFFEE BREAK
16.30-19.00	Hands-on practical teaching session on use of UPENWIN for some common problems (e.g. for use on data from porous materials) and possibility to address problems furnished by participants in the workshop - <i>Villiam Bortolotti</i>

DAY 2 – TUESDAY 19th FEBRUARY

08.30-10.30	Introduction to Matlab and advantages and limitations for use with relaxometry data and brief hands-on session - <i>Giacomo Galuppini</i>
10.30-10.50	COFFEE BREAK
10.50-12.50	Introduction to "Fitlike" tool in Matlab, scope of software, applications, advantages

	and limitations - <i>Lionel Broche & Manuel Petit (via remote connection)</i>
12.50–14.00	LUNCH
14.00 – 16.00	Session on programming for personalized applications in Fitlike - <i>Lionel Broche & Manuel Petit (via remote connection)</i>
16.00–16.20	COFFEE BREAK
16.20-18.20	Hands-on practical session with Fitlike tool in Matlab - <i>Lionel Broche</i>
18.20-19.30	SOCIAL EVENT: WINE PARTY offered by STELAR Srl

DAY 3 – WEDNESDAY 20th FEBRUARY

08.30-10.30	Introduction to Fortran/C++ compiler, uses, applications, advantages and limitations - <i>Danuta Kruk</i>
10.30-10.50	COFFEE BREAK
10.50-12.50	Hands-on teaching session for Fortran/C++ with case studies - <i>Danuta Kruk</i>
12.50–14.00	LUNCH
14.00 – 16.00	Introduction to “Fitteia” software, scope of software, applications, advantages and limitations - <i>Pedro Sebastiao</i>
16.00–16.20	COFFEE BREAK
16.20-18.20	Hands-on session with Fitteia including some common practical examples and the possibility to address some problems furnished by participants in the workshop - <i>Pedro Sebastiao</i>
20.00	SOCIAL DINNER

DAY 4 – THURSDAY 21st FEBRUARY

08.30-10.30	Introduction to “Florence NMRD program” (in Fortran) for data analysis of MRI contrast agents, scope of software, advantages and limitations - <i>Giacomo Parigi</i>
10.30-10.50	COFFEE BREAK
10.50-12.50	Hands-on teaching session for Florence NMRD program including some common examples - <i>Giacomo Parigi</i>
12.50–14.00	LUNCH
14.00 – 16.00	Introduction to NMR relaxometry simulation tools, scope, advantages and

	limitations - <i>Pascal Fries</i>
16.00–16.20	COFFEE BREAK
16.20-18.20	Round-table discussion on the state of the art of the current software available for relaxometry data elaboration and analysis and needs for the future and possible developments - <i>Chaired by Danuta Kruk</i>

DAY 5 – FRIDAY 22nd FEBRUARY

08.30-10.30	Introduction to Origin software, uses, applications, advantages and limitations - <i>Danuta Kruk</i>
10.30-10.50	COFFEE BREAK
10.50-12.50	Hands-on teaching session for Origin with case studies - <i>Danuta Kruk</i>
12.50–14.00	LUNCH
14.00 – 16.00	Hands-on session of choice and specific questions arising during the school (Participants propose/bring own problems to solve with the different software reviewed during the school) - <i>Danuta Kruk, Lionel Broche, Pedro Sebastiao</i>
16.00–16.20	COFFEE BREAK
16.20-17.50	Hands-on session of choice and specific questions arising during the school (Participants propose/bring own problems to solve with the different software reviewed during the school) - <i>Danuta Kruk, Lionel Broche, Pedro Sebastiao</i>
17.50-18.20	Closing remarks - <i>COST action Chair, Danuta Kruk</i>

Sponsors

Thanks to COST for financial support, the University of Pavia for providing a lecture room and local organization and to STELAR Srl for help with admin and local organization of the school and for providing refreshments for the wine party. Bracco is thanked for stationery items.