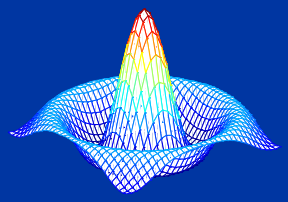
Vibrational spectroscopy and Chemometrics



Training session
23-27 February 2015

The CRA-W

Established in 1872, the Walloon Agricultural Research Centre (CRA-W) is a leading scientific institution, under the Walloon Ministry of Agriculture. CRA-W employs some 450 people including 120 scientists. Its offices, laboratories, greenhouses, orchards and experimental plots occupy an area of about 300 ha.

The expertise available at this multidisciplinary research institution covers the following areas: plant breeding, genetic engineering, plant genetic resources management, integrated plant protection, farming systems, agricultural engineering and agro-meteorology, optimisation of agricultural foods productions and analysis and quality control of agro-food products.

The Valorisation of Agricultural Products Department of the CRA-W has internationally renowned expertise in spectrometric and chemometric analysis applied to the qualitative management of agro-food products among others. As far as research is concerned, we have gone to great lengths to develop analytical techniques that will enable us to measure or assess the quality of agricultural products from various angles. The expertise obtained from this activity gives us the opportunity to offer services to industry as well as to society (analyses conducted on behalf of inspection offices in the Ministry of Agriculture and the Ministry of Public Health). The Valorisation of Agricultural Products Department has an expertise on the development and validation of analytical methods for the authentication of agro-food products. This expertise covers different techniques including microscopy, spectroscopy, DNA technology, chromatography, imaging or chemometrics among others.

Context

For the 9th consecutive year, the CRA-W organises a complete training on vibrational spectroscopy and chemometrics.

In this training you will have a complete overview of the theory of the spectroscopic and chemometric methods most commonly used. This will be completed with dynamical practical sessions in multidisciplinary laboratories, which will give you some tips and tricks useful when dealing with spectroscopy and chemometrics.

Venue

The training will be hosted by the Valorisation of Agricultural Products Department (Henseval Building) of the Walloon Agricultural Research Centre (CRA-W) in Gembloux.

Date of the training
23-27 February 2015

Fee and registration
Participation to this training is 2000€ per participant.
The registration fee includes attendance at the 5 days training, the training book with all courses, coffee breaks, lunches and a training diner.

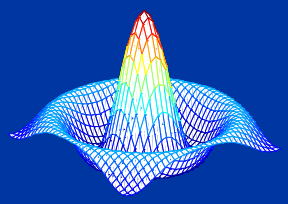
Registration is done by sending an email to:
j.fernandez@cra.wallonie.be

Deadline for registration: 10th February 2015 within the limits of available places.

Accommodation
Room reservations can be made at the hotel
Best Western "Les 3 clés" (70€/night)
Address mail: hotel@3cles.be

For more informations : CRA-W Valorisation of Agricultural Products Department
Henseval building – Chaussée de Namur, 24 5030 Gembloux-Belgium tel +3281620352 fax +3281620388
Mail: j.fernandez@cra.wallonie.be

Vibrational spectroscopy and Chemometrics



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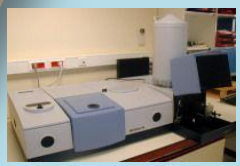
The audience

The training is technical and practical and dedicated to participants with none or little knowledge in vibrational spectroscopy and chemometrics. Dedicated sessions could be organized for people with some knowledge on the methods.

Vibrational Spectroscopy

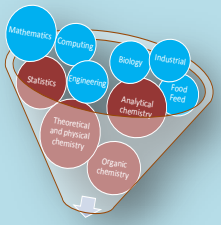
NIR/MIR/RAMAN
Theory and applications, experimental/sample plan

NIR microscopy/Hyperspectral imaging/embedded NIR/ MEMs/instrument standardization/networking

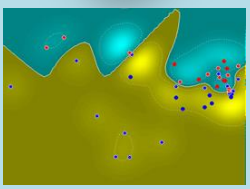


Chemometrics applied to vibrational data

Exploratory analysis:
Data visualisation
Principal component analysis
Outlier detection
Uncertainty estimation



Quantification and classification
Multivariate calibration:
Partial east squares PLS
Multiple linear regression MLR
Support vector machines SVM



List of speakers

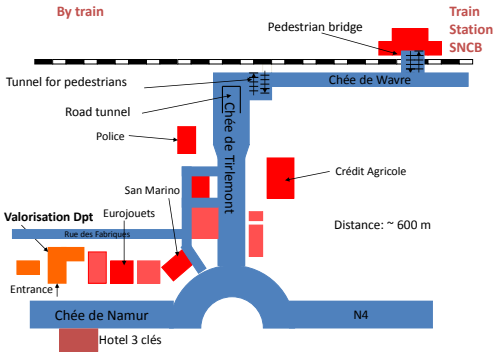
Abbas, Ouissam (MIR spectroscopy)
Baeten, Vincent (Raman / Hyperspectral imaging)
Dardenne, Pierre (NIR considerations)
Fernandez Pierna, Juan Antonio (Chemometrics)
Lecler, Bernard (transfer/standardization)
Minet, Olivier (NIR networks)
Sinnaeve, Georges (NIR online)

Invited speaker: Murray, Ian (NIR spectroscopy)

How to get to Gembloux

By train from Brussels

At any railway station in Brussels (Midi, Central, North, Schumann and Luxembourg) take a direct train (every half an hour) direction Namur-Luxembourg.
You can consult directly the schedules on the national railway company website: www.b-rail.be.
It takes about 10 min to walk from Gembloux Station to the Valorisation of Agricultural Products Department of the CRA-W.



By car

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