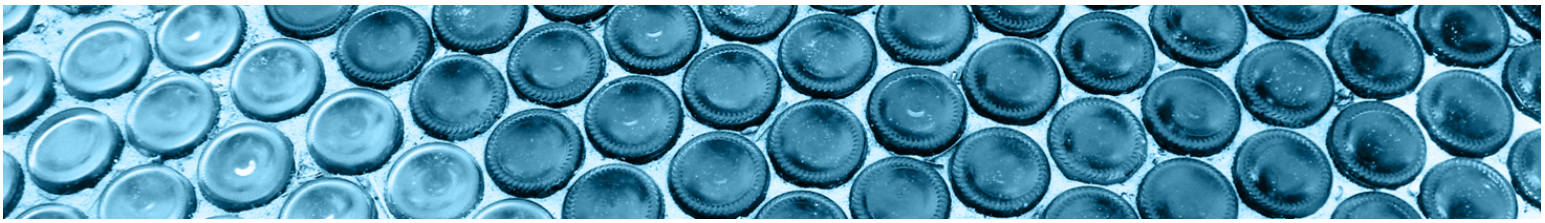

PRACTICAL UNCERTAINTY ANALYSIS IN LIFE CYCLE ASSESSMENT

THE COURSE

This course aims to strengthen practice of uncertainty assessment in Life Cycle Assessment. The course will provide the background for understanding the basic math of LCA-modeling and how uncertainty propagates from input data to model output; methods to account for correlations between variables are presented. It also introduces the practice of global sensitivity analysis to determine how much each input parameter contributes to the output variance.

COURSE OUTLINE

Lectures and practical sessions using python notebooks:

- Introduction on concepts and types of uncertainties
- Mismatch between research question and modeling choices: model uncertainty
- Background basic mathematical formulation of LCA to show how the uncertainty propagates from input data to model output
- Analytical method for uncertainty propagation
- Sampling methods for uncertainty propagation (e.g. Monte Carlo)
- Including correlations in uncertainty propagation
- Overview of methods for global sensitivity analyses
- Handling models corresponding to real-life case studies

FORM AND ACADEMIC RECOGNITION:

Form: 12 hours lectures, 12 hours practical sessions distributed in 3 full days.
Academic recognition: 2 ECTS points. This includes reading a mandatory list of literature.

LEARNING OUTCOMES:

- Knowledge on uncertainty types, concepts and methods for uncertainty analyses
- Understanding of the basic math behind uncertainty propagation in LCA
- Ability to run uncertainty analyses on an LCA case study through Python notebook
- Ability to apply analytical method for uncertainty propagation
- Ability to apply a sampling method for uncertainty propagation
- Ability to account for correlation between variables in uncertainty analysis
- Ability to determine how much each input parameter contributes to the output variance (global sensitivity analysis)
- Ability to communicate on uncertainty results

ILCA International

WHEN AND WHERE?:
Monday, March 12, 2018 to Wednesday, March 14, 2018,
Spain, Barcelona, International Life Cycle Academy (ESCI-UPF), Passeig Pujades 1

PARTICIPANT PREREQUISITES:
A basic understanding of life cycle assessment. Must bring own laptop computer with Anaconda platform installed. Experience or affinity with programming in Python is an advantage, not a prerequisite.

TEACHING STAFF:
Dr. Evelyne Groen, Data scientist at areto GmbH (Berlin), Germany
Dr. Marie de Saxcé, 2.-0 LCA consultants (Barcelona), Spain
Prof. Bo Weidema, University of Aalborg, Denmark

PRICE AND COURSE CONDITIONS:
3000 Euro for professionals,
1000 Euro for university personnel and
600 Euro for students.
Second registrations from the same institution offered at 50% discount. Does not include travel, accommodation and meals. Please ask for our list of accommodation recommendations.

Minimum and Maximum number of participants: 4-20
Status: Proposed
Registration deadline: 12 February 2018

CONTACT PERSON:
Inger Weidema, E-mail: inger@ilca.es

ILCA International