

Course 2: Current Developments in Life Cycle Impact Assessment

Lecturer

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Abstract

Life Cycle Assessment (LCA) is widely used for quantifying the environmental impacts of a product or a process throughout its entire life cycle from primary material extraction through manufacturing, use, and disposal.

LCA consists of both a life cycle inventory (LCI), storing all relevant data on emissions, as well as energy and material usages, and a life cycle impact assessment (LCIA), where damages are allocated to the respective emissions and resource usages.

LCA is an active research field with substantial development. This short course introduces LCA to a broader audience and in particular highlights new and ongoing development within LCIA. Participants will be guided through different application examples. We will cover new developments relating to spatial detail. The representation of spatial detail has greatly advanced during recent years and allows researchers to assess consequences and damages of anthropogenic intervention in a spatially explicit way. This is an important improvement since many impact categories, e.g. water use, among others, have a distinct spatial component. The scarcity of water, for example, varies greatly around the world and therefore damages of water consumption will vary between regions.

Course Objectives

- introduce LCA
- give participants an overview of new developments in LCIA
- cover the importance of spatial differentiation and introduce current research on the topic
- provide hands-on application examples

Preliminary timeline (9:00 – 17:20)

The course is planned for 6 hours.

Lesson 1	Introduction to LCA
Lesson 2	New developments: the example of the LC-Impact methodology
Lesson 3	Regionalization: methodology
Lesson 4	Regionalization: the example of water and land use
Lesson 5	Hands-on application example
Lesson 6	Hands-on application example

Requirements

Participants are required to bring their own laptops if they want to participate in the practical examples.