Seminar

Critical Reasoning and Logic

Target group	PhD students and postdocs
Seminar description	Scientists have to give arguments in many different contexts: in their publications, in grant applications, in lab meetings and in conference presentations. Nevertheless, the bases for strong and correct arguments are not always fully clear to them. Logic provides extremely helpful tools for scientists to develop their arguments in a coherent, well-structured and convincing way. The seminar gives an introduction to the most important concepts of logic: premises and conclusions of arguments, validity and soundness of arguments, deductive vs. inductive reasoning, common types of inferences and fallacies. The idea of the seminar is to use these concepts as a toolbox which provides very useful techniques for everyday scientific work. The participants learn how to reconstruct arguments from scientific texts, how to give well-structured and logically valid arguments, and how to avoid misunderstandings. There are two main sets of exercises: one for written argumentation and one for oral argumentation.

Contents

- basic concepts of logic (validity and soundness or arguments etc.)
- inductive and deductive arguments
- common types of fallacies
- reconstructing arguments from texts
- tips and exercises for written argumentation
- tips and exercises for oral argumentation

Objectives

The participants...
- state their arguments in a precise and logically coherent way
- learn to quickly identify the strengths and weaknesses of arguments
- learn how to break-down arguments into their logical structure
- train analytical thinking

Methods

The methods are interactive throughout. The course provides extensive exercises that aim at the application of the acquired skills to the participants' individual fields of work. The participants can bring their own texts to the seminar and get the chance to apply the acquired methods directly to topics from their own research.

Materials

- seminar script including a bibliography (pdf document)
- exercise sheets

Duration   2 days, 9 am – 5 pm

Group-size   Max. 12 participants