
BERN-FRIBOURG GRADUATE SEMINAR

a seminar for Master and PhD students

Wednesday 10th May, 2023: 17:15 - 18:00

Room 2.73, Perolles 08, Fribourg

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Introduction to unification in modal logic

Abstract

Description logics are particular modal logics which arise in the research area called knowledge representation. In this setting knowledge about some objects is represented by a set of binary relations between the objects. Examples of such relations are “is an instance of”, “is a part of” or very concretely: “is the capital of”. Now description logics can be used to formally argue about the available information.

We introduce the problem of unification in a logic and describe how it just means “solving equations”. By restricting our setting to just one relation, we introduce the smallest normal modal logic K , and some current research about its unification problem.

The approach we use to motivate unification in K is based on the paper “Unification in modal and description logics” by F. Baader and S. Ghilardi.