



Universität Konstanz

Logic in Konstanz

Invitation

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ON THE MODAL PRINCIPLES OF FORCING

The talk will take place
on **Monday, 16.12.2024** at **15:15** in room **F426**.

All interested are welcome to attend.

Abstract: Forcing is a fundamental technique in set theory that was introduced in 1963 by Paul Cohen and has since revolutionized the field of set theory, leading to far-reaching applications and an abundance of new models of ZFC. The relation between a ground model and its forcing extensions has led to the notion of the set-theoretic multiverse, a rich hierarchy of set-theoretic universes. Its structure has been studied by means of a forcing interpretation of the modalities \Box and \Diamond . For a model \mathcal{M} of set theory we interpret $\mathcal{M} \models \Box\varphi$ as “in every forcing extension φ holds” and $\mathcal{M} \models \Diamond\varphi$ as “in some forcing extension φ holds”.

In this talk I will outline to what extent we know the modal validities of forcing. This question was first investigated in a paper by Joel David Hamkins and Benedikt Löwe (2007) for *propositional* modal logic. I will discuss recent joint work with Hamkins, which aims to give a further account on the fundamental structure of forcing by generalising their approach to *predicate* modal logic.

This talk does not require prior knowledge of forcing or predicate modal logic

Carolin Antos, Salma Kuhlmann
Coordinators of the Logic Colloquium