

A U S H A N G

FREIE UNIVERSITÄT BERLIN

Fachbereich Mathematik und Informatik

Promotionsbüro, Arnimallee 14, 14195 Berlin

DISPUTATION

Mittwoch, 11. Juli 2018, 12.00 Uhr

Ort: SR 006, Informatik, Takustr. 9 (T9.006), 14195 Berlin

Disputation über die Doktorarbeit von

Herrn Alexander Steen

Thema der Dissertation:

**Extensional Paramodulation for Higher-Order Logic
and its Effective Implementation Leo-III**

Thema der Disputation:

Universal Logic: Automation of Expressive Non-Classical Logics

Die Arbeit wurde unter der Betreuung von **Prof. Dr.-Ing. habil. Chr. Benz Müller** durchgeführt.

Abstract: Recent results and associated experiments in the context of theoretical philosophy, mathematics, machine-ethics, AI and further domains suggest that classical higher-order logic (as described by Church and further developed by Henkin, Andrews and others) can be used as a meta-logic for effective automation of various expressive non-classical logics. Popular examples include the automation of variants of higher-order modal logics, many-valued logics, free logics and deontic logics. In this talk, I will survey a quite generic shallow semantical embedding approach that allows reducing automation of non-classical logics to reasoning in classical higher-order logic for which powerful deduction systems exist. Additionally, some example applications of this approach will be presented and discussed.

Die Disputation besteht aus dem o. g. Vortrag, danach der Vorstellung der Dissertation einschließlich jeweils anschließenden Aussprachen.

Interessierte werden hiermit herzlich eingeladen

Der Vorsitzende der Promotionskommission
Prof. Dr.-Ing. habil. Chr. Benz Müller