A U S H A N G

FREIE UNIVERSITÄT BERLIN
Fachbereich Mathematik und Informatik

Promotionsbüro, Arnimallee 14, 14195 Berlin

D I S P U T A T I O N

Freitag, 29. Juni 2018, 14.00 Uhr

Ort: Raum 032, Arnimallee 6, 14195 Berlin

Disputation über die Doktorarbeit von

Herrn Christopher Pütz

Thema der Dissertation:
Investigation of the interaction between gravity waves and the tropopause

Thema der Disputation:
Monte-Carlo tree search and its application to board games

Die Arbeit wurde unter der Betreuung von **Prof. Dr.-Ing. R. Klein** durchgeführt.

Abstract: The great success of Deepmind's Go agent AlphaGo, being the first AI that could beat a world-class human Go player consistently, brought machine learning and neural networks to a greater public. At its core however, AlphaGo uses a simple technique called Monte-Carlo tree search (MCTS) that started gaining popularity among AI researchers in the mid-2000's. It is based on a stochastic evaluation of a game tree rather than a deterministic one, which allows programs using MCTS to explore much larger game trees. This made the technique a serious contender for high-level Go agents, but also its efficiency along with remarkable results in Go let to a transfer to other board games, such as "Scotland Yard", the winner of the prestigious "Spiel des Jahres" prize in 1983 and even to real-time strategy games like "Starcraft". In this talk, I will present the basic ideas of MCTS along with a study on the simple game "X's and O's". Moreover, the results of an application of the technique on several other board games, like "Scotland Yard" and "Settlers of Catan" will be briefly 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. R. Klein