

A U S H A N G

FREIE UNIVERSITÄT BERLIN

Fachbereich Mathematik und Informatik

Promotionsbüro, Arnimallee 14, 14195 Berlin

DISPUTATION

Donnerstag, 12. September 2024, 17:00 Uhr

Ort: Seminarraum 006

(Fachbereich Mathematik und Informatik, Takustr. 9, 14195 Berlin)

Disputation über die Doktorarbeit von

Marcin Nawrocki

Thema der Dissertation:

DDoS Attacks: Coverage, Mitigation, and Prevention

Thema der Disputation:

**DDoS Threats in the Current and Future Internet: Insights from
Measurement Research**

Die Arbeit wurde unter der Betreuung von **Prof. Dr. M. Wählisch** durchgeführt.

Abstract: The Internet is a complex system of interconnected networks, forming a critical infrastructure with profound socio-economic importance. Disruptions to its services can have severe consequences. Despite ongoing efforts to enhance security, Distributed Denial of Service (DDoS) attacks remain a significant threat due to inherent conceptual flaws, technical trade-offs, and implementation errors. In the first part of this presentation, we revisit established protocols and examine their exposure to DDoS attacks. We will discuss the persistent challenges these attacks pose and emphasize the necessity of focusing on the three pillars of DDoS research: expanded coverage, improved mitigation techniques, and proactive prevention.

The second part highlights recent findings that enhance attack observations and reveal vulnerabilities in emerging Internet protocols and extensions. This presentation underscores the ongoing need for precise and comprehensive measurement research and advocates for continuous collaboration between researchers and network operators, fostering a feedback loop that strengthens the Internet's resilience against DDoS attacks.

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. M. Wählisch