



# *EINLADUNG*

im Rahmen des Teilchenphysikseminars

zum Vortrag

von

**Claudius Krause**  
(HEPHY, Vienna)

über

## **„Improving HEP Simulation and Analyses with Invertible Neural Networks“**

### **Abstract:**

LHC run 3 just started and in the years leading up to 2040, we will see a 20-fold increase in available data. This forthcoming dataset will have enormous potential for a deeper understanding of the Standard Model and possible physics beyond it.

In my talk, I will highlight how advancements in modern Machine Learning can help speed up crucial bottlenecks and open new avenues for model-agnostic searches of physics beyond the Standard Model.

In particular, I will focus on Normalizing Flows (also known as invertible neural networks), which provide a versatile class of Machine Learning models that have seen many applications to high-energy physics.

I will discuss how Normalizing Flows can be used to improve the unweighting efficiency in Monte Carlo event generation, speed up detector simulation, and how they can boost bump hunt searches for new physics.

**Zeit:** Dienstag, **9.1.2024, 16:15 h**

**Ort:** Erwin-Schrödinger-Hörsaal, Boltzmanngasse 5, 5. Stock

Join Zoom Meeting - Meeting ID: 933 4269 3866 Passcode: 185096

<https://univienne.zoom.us/j/93342693866?pwd=aUpTR0VJNUhJY2Q0ajdaKzI1YWVhYkQ0OQ==>

gez.: A. Hoang, M. Procura