

# Physics Colloquium

**Prof. Timm Wrase**

**Department of Physics  
Lehigh University**

## **“ $\alpha$ -attractor models of inflation”**

*Inflation, a short period of rapid expansion of our universe shortly after the big bang, was invented in the 1980's. Inflation solved the flatness and horizon problem in cosmology and has predicted the later observed fluctuations in the first light in the universe, the so-called cosmic microwave background (CMB). More and more detailed studies of the CMB in the last decades have already excluded many specific models of inflation and in the next 10 to 15 years we expect a more than tenfold improvement on the bounds of some parameters. The hope is that this will allow us to single out one specific model of inflation that accurately describes our universe. I will discuss so-called  $\alpha$ -attractor models that provide some of the most promising targets for future observations and that are related to paintings by Maurits Cornelis Escher.*

Timm Wrase received his PhD from the University of Texas at Austin in 2008. Afterwards he held postdoc positions at the Max-Planck-Institute in Munich, Cornell University and Stanford University. Before joining Lehigh in January 2020, he was an assistant professor at the Technical University Vienna in Austria. In his research he is using string theory, the best understood theory of quantum gravity, to construct theoretical models that describe the cosmological evolution of our universe. His other research interests include supergravity, dualities in string theory and moonshine phenomena that connect different branches of mathematics.

**Thursday, October 28, in LL 316 at 4:25 PM**

***For Zoom participation, please see information below:***

**Meeting ID: 972 1274 7894**

**Passcode: 631869**