



Das Institut für Physik

Institutsbereich Geophysik, Astrophysik und Meteorologie

lädt zu folgendem Vortrag

im Rahmen des **Astrophysikalischen Kolloquiums** ein:

## **"Rotation and magnetic activity of solar-like stars: where does the Sun stand?"**

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While the magnetic activity of the Sun has been studied for many decades, our current knowledge of the detailed processes at play in the solar dynamo is still incomplete, as seen for instance with the difficulty to predict lengths and strengths of future solar cycles. The importance of studying magnetic activity in other stars in order to put the Sun in context was realized several decades ago with the Mount Wilson survey. With the photometric data collected by space missions such as CoRoT, Kepler/K2, and TESS, it is possible to progress on the study of rotation and magnetic activity for a large number of stars.

Understanding the transport of angular momentum is crucial to better determine the stellar ages when using stellar evolution models. More than 40 years ago, Skumanich (1972) showed how rotation and magnetic activity decreased with the age of a solar-like star. While this result was based on the study of young cluster stars, later observations of other clusters, still younger than the Sun, agreed with this age-rotation or “gyrochronology” relationship. With more recent studies based on Kepler data, this empirical relation does not seem to hold, opening new questions on stellar dynamics evolution.

In this talk, I will focus on solar-like stars (including solar analogs) where rotation and magnetism could be measured with photometric data. I will show how Kepler data are providing key information on the understanding of angular momentum transport and magnetic activity in stars at different evolutionary stages and compare them to the Sun.

Time: **Wednesday, May 5, 2021, 17:00 CEST (st!)**

Meeting: <https://unigraz.webex.com/meet/paul.beck>

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