ALPEN-ADRIA UNIVERSITÄT KLAGENFURT

INVITATION TO A GUEST LECTURE

# Equivalent linear flows revisited

**Arno Berger** | University of Alberta, Edmonton, Canada

Chaired by Christian Pötzsche | Department of Mathematics

Tuesday, 16 June 2026 | 10:00–11:00

HS 7

## ABSTRACT

Linear flows on a finite-dimensional normed space X constitute what is arguably the simplest class of dynamical systems. When exactly are two such flows equivalent, that is, when do they have the same phase portrait, up to a homeomorphism h of X? The answer, unsurprisingly, depends on the smoothness of h, which in turn gives rise to several natural classifications of linear flows up to equivalence. Some classification theorems date back to the 1970s and have been part of linear systems folklore ever since. While the results are easy to intuit for familiar forms of smoothness (say, if h is Lipschitz or differentiable), their proofs tend to involve some delicate and potentially murky analysis. This talk aims to present in a friendly, non-technical way several new tools that facilitate an entirely elementary approach to the classification of linear flows. (Joint work with A. Wynne.)

**We hope to see you there!**