UNIVERSITÄT
SALZBURG

SALZBURG MATHEMATICS COLLOQUIUM
Summer 2018

Siegfried Hörmann (Graz)

„Detection of periodicity in functional time series"

May 24, 2018

Abstract:

We derive several tests for the presence of a periodic component in a time series of functions. We consider both the traditional setting in which the periodic functional signal is contaminated by functional white noise, and a more general setting of a contaminating process which is weakly dependent. Several forms of the periodic component are considered. Our tests are motivated by the likelihood principle and fall into two broad categories, which we term multivariate and fully functional. Overall, for the functional series that motivate this research, the fully functional tests exhibit a superior balance of size and power. Asymptotic null distributions of all tests are derived and their consistency is established. Their finite sample performance is examined and compared by numerical studies and application to pollution data.

Thursday, **15:00-15:45**
Hörsaal 414, 1. Stock