

DETECTING STRUCTURAL BREAKS IN THE DEGREE OF DEPENDENCE BETWEEN TIME SERIES

SCHNURR, ALEXANDER

University Siegen, Germany, schnurr@mathematik.uni-siegen.de

DEHLING, HEROLD *Ruhr University Bochum, Germany*

non-linear dependence; time series; short range dependence

Using average weighted ordinal pattern dependence (AWOPD) we measure the degree of dependence between time series. The interplay between the time series might change over time. Therefore, we present a test for structural breaks. The method is more robust than the classical one which we have presented at last year's DynStoch meeting. In contrast to methods which are using correlation we only need the existence of first moments in order to apply our method. The possibility to choose different metrics on the space of ordinal patterns allows us to analyze various kinds of dependence.

References

- [1] Schnurr, A., Dehling, H. (2016+). Testing for Structural Breaks via Ordinal Pattern Dependence, to appear in *JASA*.
- [2] Schnurr, A. (2014). An Ordinal Pattern Approach to Detect and to Model Leverage Effects and Dependence Structures Between Financial Time Series. *Stat. Papers* **55(4)**, 919–931.