

NEW CHARACTERIZATIONS OF THE S TOPOLOGY
ON THE SKOROKHOD SPACE

The S topology is related to papers by Meyer and Zheng ([4], for quasimartingales) and Stricker ([5], for semimartingales). They provided simple and verifiable *sufficient* conditions for uniform tightness of stochastic processes in some topology (called since then the Meyer-Zheng topology) on the Skorokhod space of cadlag functions. Their ideas were developed by Kurtz [3] and found the final form in the paper by the author [2], where the S topology has been defined and it was proved that the conditions of Meyer-Zheng-Stricker are in fact *necessary and sufficient* for the uniform tightness in S .

In the talk two new characterizations of the S topology will be presented. They are either related to the origins of the S topology (convergence of stochastic integrals [1]) or find a distinguished position for the S topology in the hierarchy of topologies on the Skorokhod space.

REFERENCES

- [1] Jakubowski, A., Convergence in various topologies for stochastic integrals driven by semimartingales, *Ann. Probab.*, **24** (1996), 2141–2153.
- [2] Jakubowski, A., A non-Skorohod topology on the Skorohod space, *Electron. J. Probab.*, **2** (1997), No 4, 1-21.
- [3] Kurtz, T., Random time changes and convergence in distribution under the Meyer-Zheng conditions, *Ann. Probab.*, **19** (1991), 1010–1034.
- [4] Meyer, P.A., Zheng, W.A., Tightness criteria for laws of semimartingales, *Ann. Inst. Henri Poincaré B*, **20** (1984), 353–372.
- [5] Stricker, C., Lois de semimartingales et critères de compacité, *Séminaires de probabilités XIX. Lect. Notes in Math.*, **1123**, Springer, Berlin 1985.