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Ramon Van Handel* (rvan@princeton.edu), Sherrerd Hall 227, Princeton University,
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Classical estimates on the suprema of random processes in terms of entropy numbers have found widespread use in probability theory, statistics, computer science, and other areas. Such estimates are powerful and relatively easy to use, but often fail to be sharp. To obtain sharp bounds, it is necessary to replace these methods by a multiscale analogue known as the generic chaining that was developed in depth by Talagrand. Unfortunately, the latter is notoriously difficult to use in any given situation. In this talk, I will exhibit a completely elementary construction that is almost as easy to use as classical entropy estimates, but produces sharp results in many geometric situations. In particular, I will show that when applied to a convex set, one can obtain a bound in terms of the entropy numbers of certain “thin” subsets that are often much smaller than the original convex set. Prior knowledge of these ideas will not be assumed in the talk. (Received August 10, 2015)