Learning outcomes: Chapter 4

- 1. You should understand why particularly when dealing with threshold excesses of environmental variables – dependence between successive observations can be problem.
- 2. You should be able to interpret simple diagnostics for assessing dependence (e.g. plots of partial autocorrelations).
- 3. You should understand the main consequences of ignoring dependence when it is present.
- 4. You should understand the theorem for *extremes of dependent sequences*:
 - (a) You will *not* be expected to memorise this;
 - (b) You should know the role of the *extremal index*;
 - (c) You should understand why inference for block maxima in the presence of extremal dependence remains unchanged, but why the situation is not so simple for threshold excesses.
- 5. You should be able to explain the process of *runs declustering*, and the resulting *peaks over thresholds* (POT) analysis. You should also be aware of the problems associated with the choice of declustering interval used to identify independent clusters in POT.