

Learning outcomes: Chapter 5

1. In the context of environmental extremes, you should understand why it is common to observe seasonal variability, long-term trends and dependence on covariates, and you should be able to give examples of situations in which these phenomena might arise.
2. You should understand how trend can be captured in an extreme value analysis, and you should be familiar with the deviance statistic for checking the significance of this trend (critical values from the χ^2 distribution will be given).
3. You should understand how a dependence of extremes on covariates can be investigated in exactly the same way a dependence on time is investigated in point 2 above. Indeed, dependence on time *and* covariates can be assessed simultaneously.
4. You should be able to interpret simple R output from the `ismev` package to assess the fit of a non-stationary model allowing for a dependence on time and/or other covariates.
5. You should be aware of the simple approaches for dealing with seasonal variability, including the single season approach and a piecewise seasonal approach (you will *not* be expected to implement the piecewise seasonal approach in the exam at all).