

IV.2.3 INFLUENCE OF PARAMETER VALUES ON MODEL RESPONSE

This Section describes how the parameters of the snow, soil moisture accounting and channel system models affect the response of the models in headwater areas.

A knowledge of the effect of parameter values on model response is needed in all phases of the calibration process. Such knowledge is especially needed during trial-and-error calibration, but is also important during the estimation of initial parameter values and during the selection of parameters to be included in automatic optimization. Special emphasis is placed on the effect of the parameter values on the daily flow hydrograph and the statistics computed from daily flow, since daily flow is the primary type of observed data used to calibrate the models.

This Section describes the characteristics of the effect of the parameter values on model response that are unique from the effects of other parameters. The emphasis is on those parameters that typically have the most effect on model response.

Even though the primary purpose of this Section is to describe the effect of parameter values on model response, there are also a number of recommendations on when a parameter should be adjusted during calibration because the two main reasons for knowing how parameter values affect model response are:

- o to select which parameters should be adjusted
- o to estimate the appropriate magnitudes of the changes

Section IV.2.3-SNOW-17 [[Hyperlink](#)] discusses the influence that the SNOW-17 snow model parameter values have on model response.