

Appendix A

Appendix 1: Description of the geological parameterisation code.

This appendix contains details of the code framework for geological parameterisation and how individual components of parameterisation code fit into that framework. This is encapsulated in Figure A.1 below.

The parameterisation workflows for the La Seretta study in Chapter 4 and the Ainsa II and Pacman case studies in Chapter 6 are demonstrated by Figure A.2.

The workflows for the La Seretta model in Chapter 5, where geological prior data is added to improve the forecasts is detailed in Figure A.3.

The workflows for the simple fault parameterisation case studies in Chapter 6 are illustrated in Figure A.4 which shows the RMS workflow for building a structural model and the coded parameterisation method for building RMS pillar format fault networks that can be parameterised as part of the overall uncertainty framework, then imported into RMS to build the model from.

Details of the specific parameterisation methods used in Chapter 7 are given in that chapter.

RMS models are constructed from a collection of text files, therefore the RMS workflow files can be easily changed and their parameter values updated. The location of the

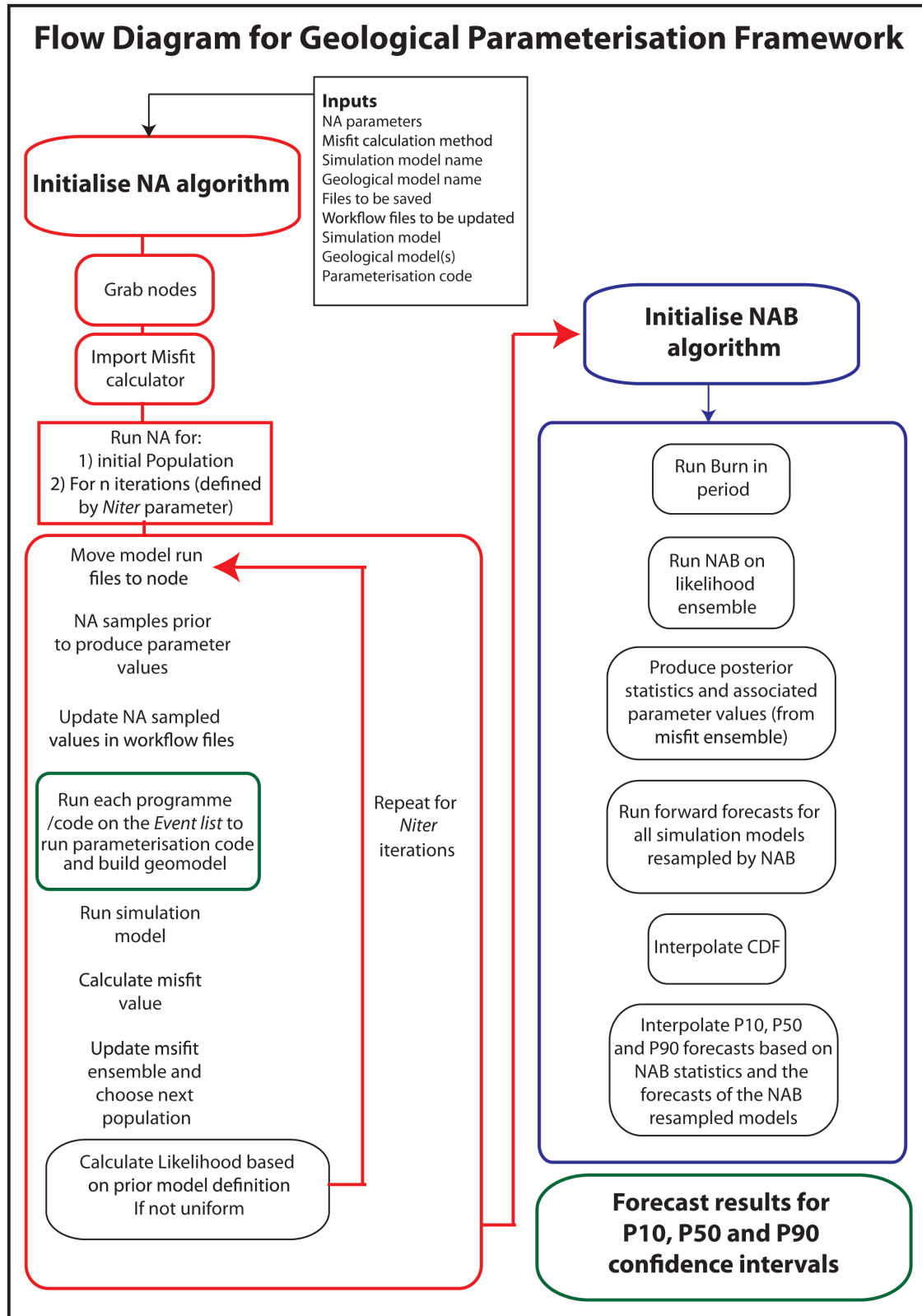


Figure A.1: A flow diagram for the main geological parameterisation and uncertainty quantification framework. Individual methods for parameterising the geology (such as the fault parameterisation code detailed in Figure 7.17) are called by the *event list*.

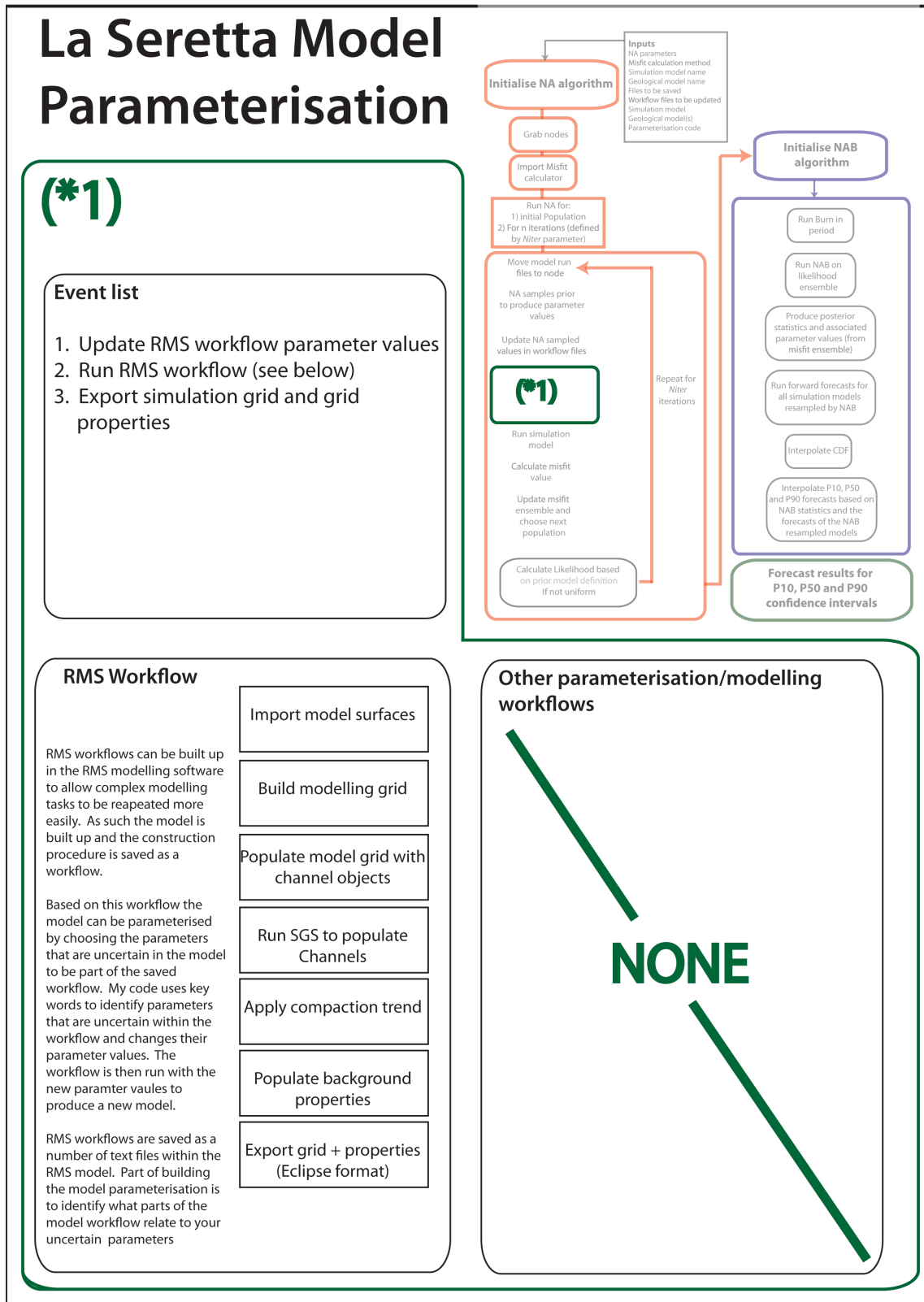


Figure A.2: Details of the standard parameterisation method applied to the La Seretta, Ainsa II and Pacman studies. The figure details the event list that describes the steps in the overall workflow, the modelling workflow applied in RMS and any additional code that is run as part of the model parameterisation.

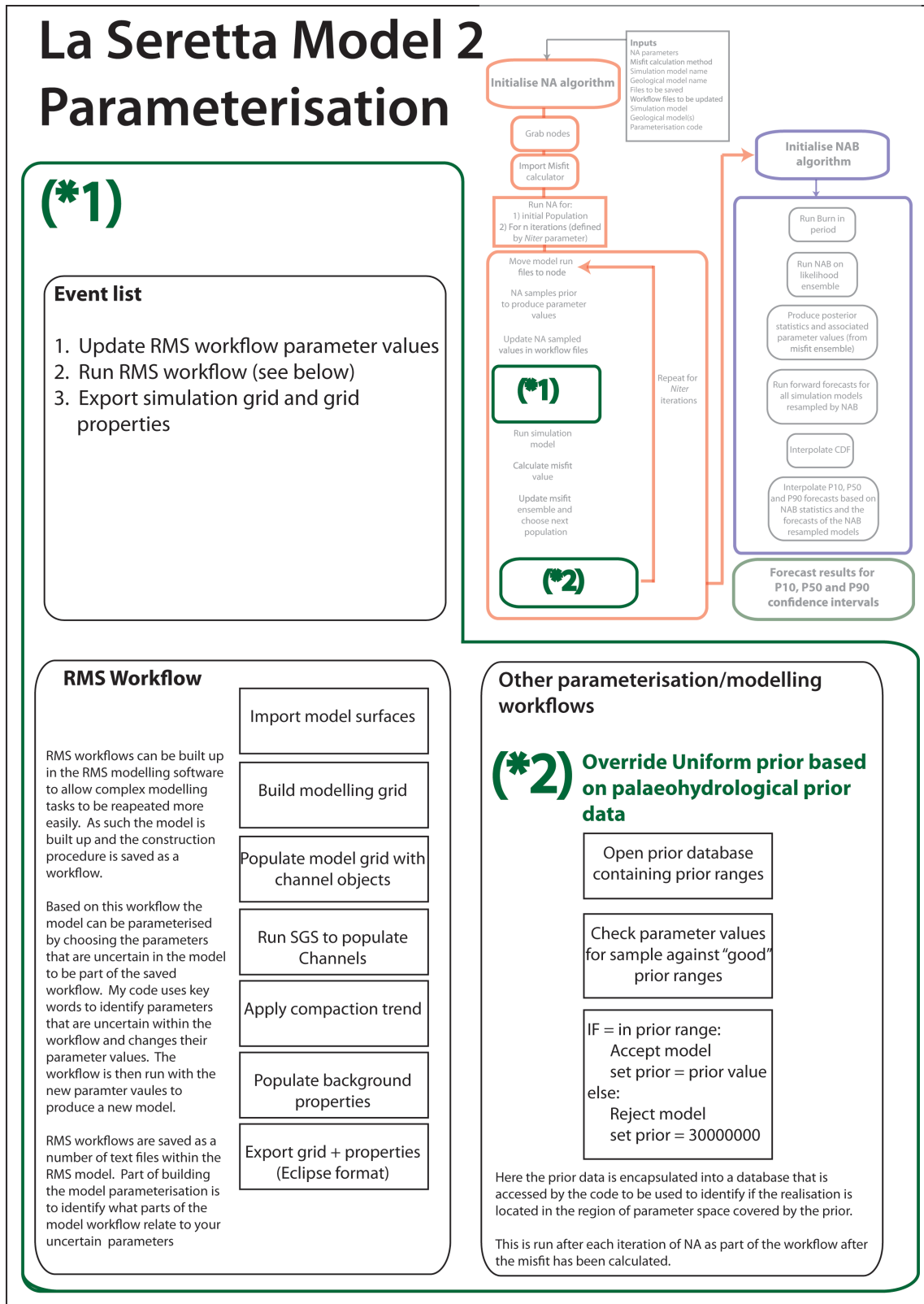


Figure A.3: Details of the standard parameterisation method applied to the La Seretta 2 (Chapter 5) case studies. The figure details the event list that describes the steps in the overall workflow, the modelling workflow applied in RMS and any additional code that is run as part of the model parameterisation.

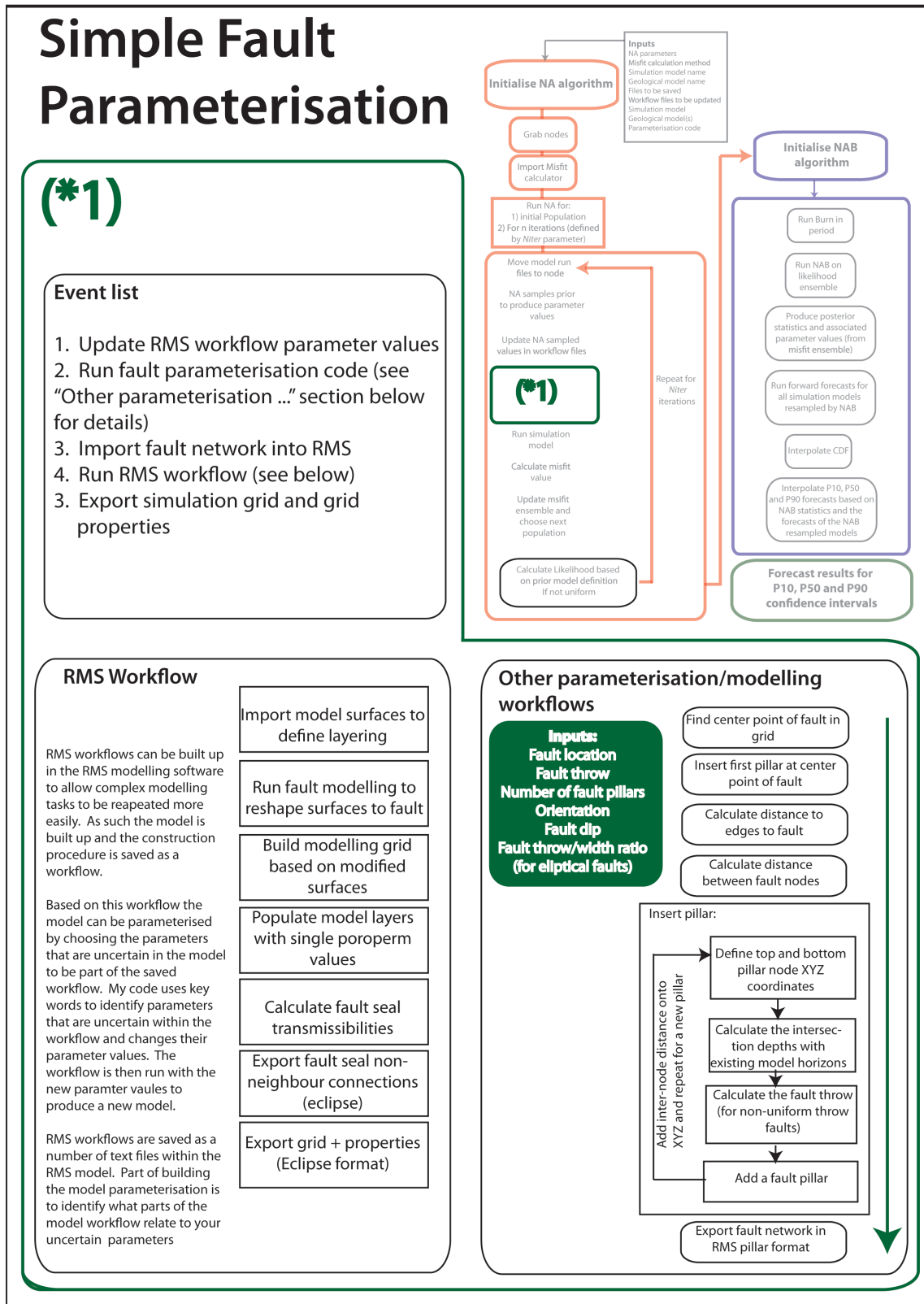


Figure A.4: Details of the standard parameterisation method applied to the Simple Fault parameterisation studies in Chapter 4. The figure details the event list that describes the steps in the overall workflow, the modelling workflow applied in RMS and any additional code that is run as part of the model parameterisation. The additional code in this case describes the method for moving faults inside the RMS model. This approach is applied and expanded upon in Chapter 7 (see Figure 7.17)

appropriate parameter value within the RMS model is case specific and must be found by the modeller beforehand. In most cases the key parameters of the model can be found in the .master files located in the volume directory. After a parameter has been identified, rigorous testing must be applied to make sure the model is functioning properly.