Table 6.1. Summary of the five cases investigated. The table shows which structural parameters were estimated and fixed, and also indicates anisotropy when used.

	Scenario	Case 1	Case 2	Case 3	Case 4	Case 5
	Initial σ_R^2	1.00E-01	1.00E-02	1.00E-05	1.00E-04	1.00E-01
	Estimated σ_R^2	-	-	7.79E-08	1.18E-05	-
Prior Parameters						
Beta Association 1	*Initial* θ	1.00E-05	1.00E-05	1.00E-05	1.00E-05	1.00E-05
	Estimated θ	2.46E-03	1.55E-02	1.25E-02	5.54E-03	3.61E-03
Beta Association 2	*Initial* θ	1.00E-05	1.00E-05	1.00E-05	1.00E-05	1.00E-05
	Estimated θ	6.16E-03	2.47E-02	1.34E-02	3.19E-03	7.97E-03
Beta Association 3	*Initial* θ	1.00E-05	1.00E-05	1.00E-05	1.00E-05	1.00E-05
	Estimated θ	2.46E-03	1.55E-02	1.21E-02	2.51E-03	7.73E-05
Anisotropy Parameters						
Beta Association 1	*horiz_angle*	-	-	-	0.0	0.0
	horiz_ratio	-	-	-	100.0	100.0
	verical_ratio	-	-	-	1.0	1.0
Beta Association 2	*horiz_angle*	-	-	-	0.0	0.0
	horiz_ratio	-	-	-	100.0	100.0
	verical_ratio	-	-	-	1.0	1.0
Beta Association 3	*horiz_angle*	-	-	-	0.0	0.0
	horiz_ratio	-	-	-	100.0	100.0
	verical_ratio	-	-	-	1.0	1.0

anisotropy in the prior covariance. Inspection of the true parameter field in figure 6.1 suggests a possible correlation along the horizontal axis, indicative of a channel feature. In cases 5 and 6, therefore, an arbitrarily chosen ratio of 100 is applied with a rotation angle of zero. In case 4, like in case 3, σ_R^2 is estimated to achieve the best possible fit, whereas in Case 5, σ_R^2 is held constant at 1.0×10^{-1}.

Figures 6.2 and 6.3 show the estimated hydraulic conductivity field and squared differences between measured and observed head values, respectively, for case 1. In this case, meant to be conservative with respect to overfitting, the squared differences are smaller in magnitude than the specified value of σ_R^2 $\left(1.0 \times 10^{-1}\right)$ and very little roughness in the solution is required to achieve the level of fit desired.