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Supporting Information for

**Partitioning Thresholds in Hybrid Implicit-Explicit Representations of Naturally Fractured Reservoirs**

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Table S1

**Introduction**

Additional numerical studies performed that corroborate the findings in the paper are presented here. In addition to the four 3D cases presented in the paper, we present here nine other cases. The properties for these nine cases are discussed in Text S1 and summarized in Table S1. The results of Fracture Subset Upscaling (FSU) and drawdown simulations are shown in Figures S1 and S2.

For the outcrop based datasets – Apodi 2 and 4, we also performed additional well test simulations by using different well positions. The results are shown in Figure S3.

Table S1. Parameters used for 3D DFN generation.\*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Case** |  |  |  |  |  |  | **Remarks** |
| **1 (A)** | 0.150 | 1.50 | 5.0 | 20 | 100 | 1 | Base parameters |
| **2** | 0.075 | 1.50 | 5.0 | 20 | 100 | 1 |  |
| **3 (B)** | 0.300 | 1.50 | 5.0 | 20 | 100 | 1 |  |
| **4** | 0.150 | 0.75 | 5.0 | 20 | 100 | 1 |  |
| **5 (C)** | 0.150 | 3.00 | 5.0 | 20 | 100 | 1 |  |
| **6** | 0.150 | 1.50 | 2.5 | 20 | 100 | 1 |  |
| **7** | 0.150 | 1.50 | 10.0 | 20 | 100 | 1 |  |
| **8** | 0.150 | 1.50 | 5.0 | 10 | 100 | 1 |  |
| **9 (D)** | 0.150 | 1.50 | 5.0 | 40 | 100 | 1 |  |
| **10** | 0.150 | 1.50 | 5.0 | 20 | 50 | 1 |  |
| **11** | 0.150 | 1.50 | 5.0 | 20 | 150 | 1 |  |
| **12** | 0.150 | 1.50 | 5.0 | 20 | 100 | 0.5 |  |
| **13** | 0.150 | 1.50 | 5.0 | 20 | 100 | 2 |  |

\*Cases 1, 3, 5 and 9 correspond to Cases A, B, C and D in the paper. See Text S1 for definition of terms.