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## EnKF simulation results

*John Petter Jensen*

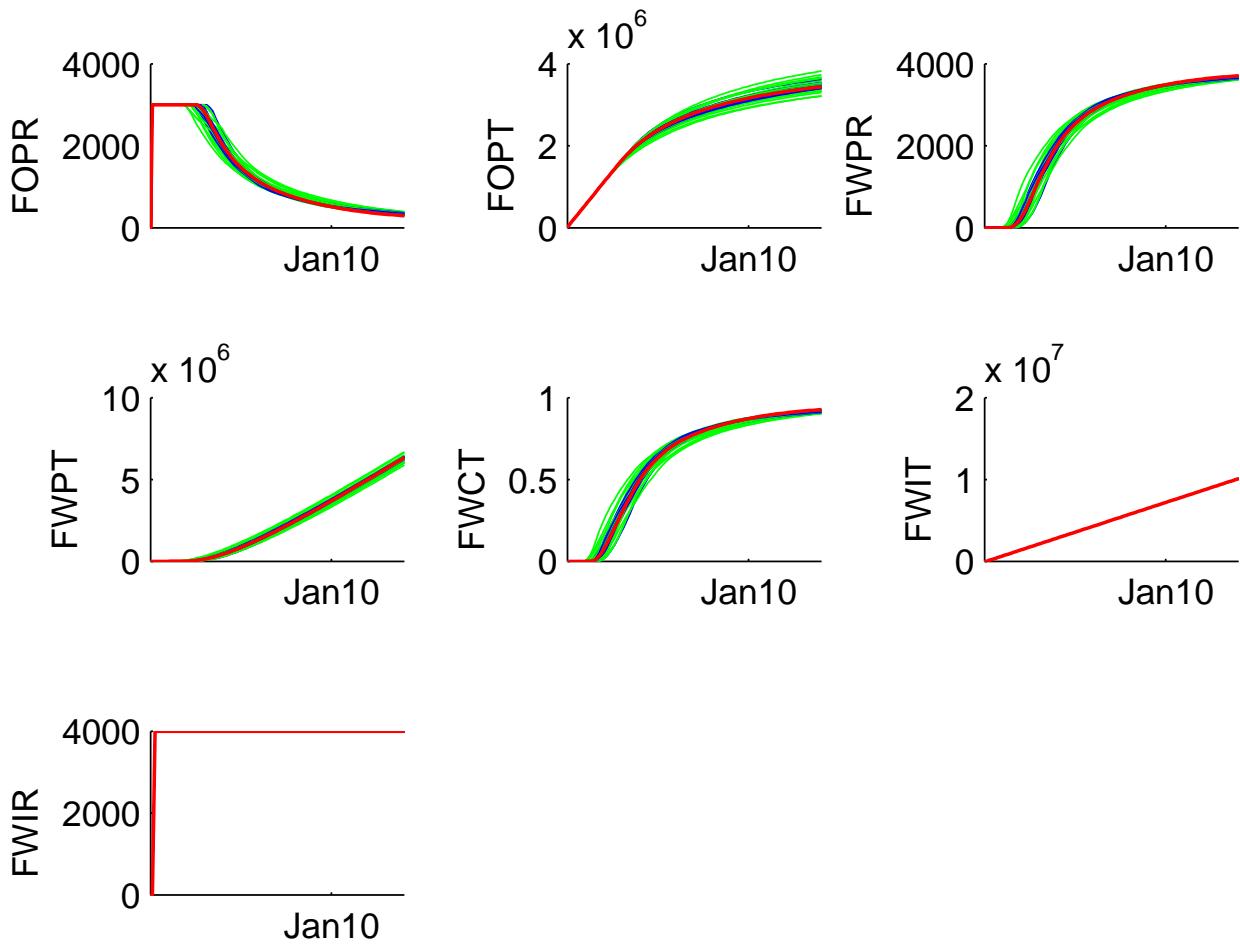
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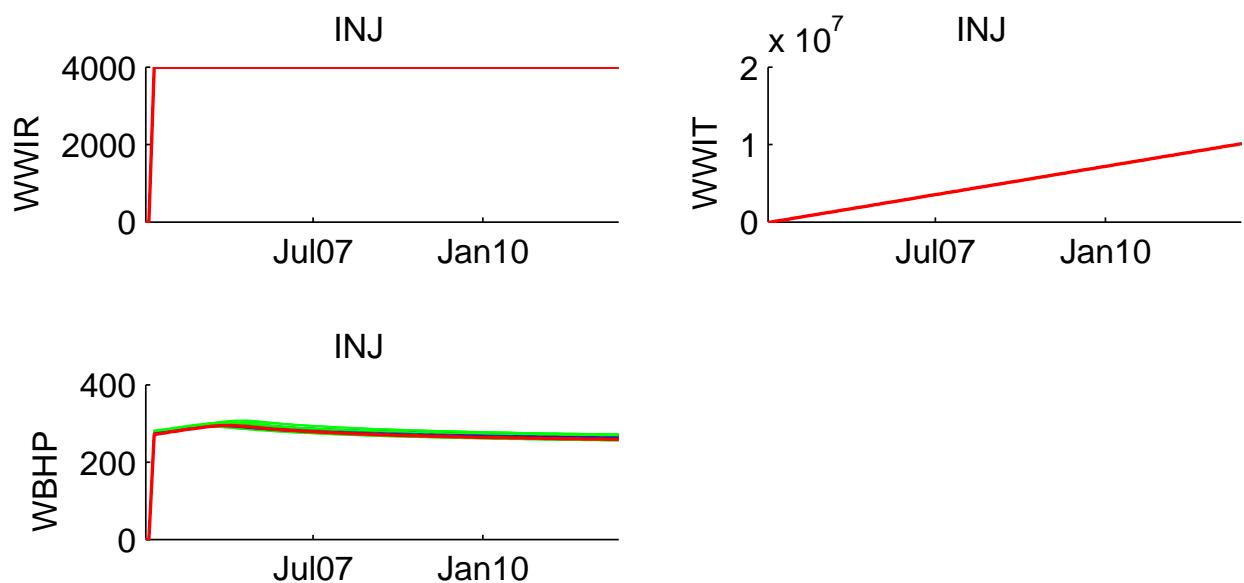
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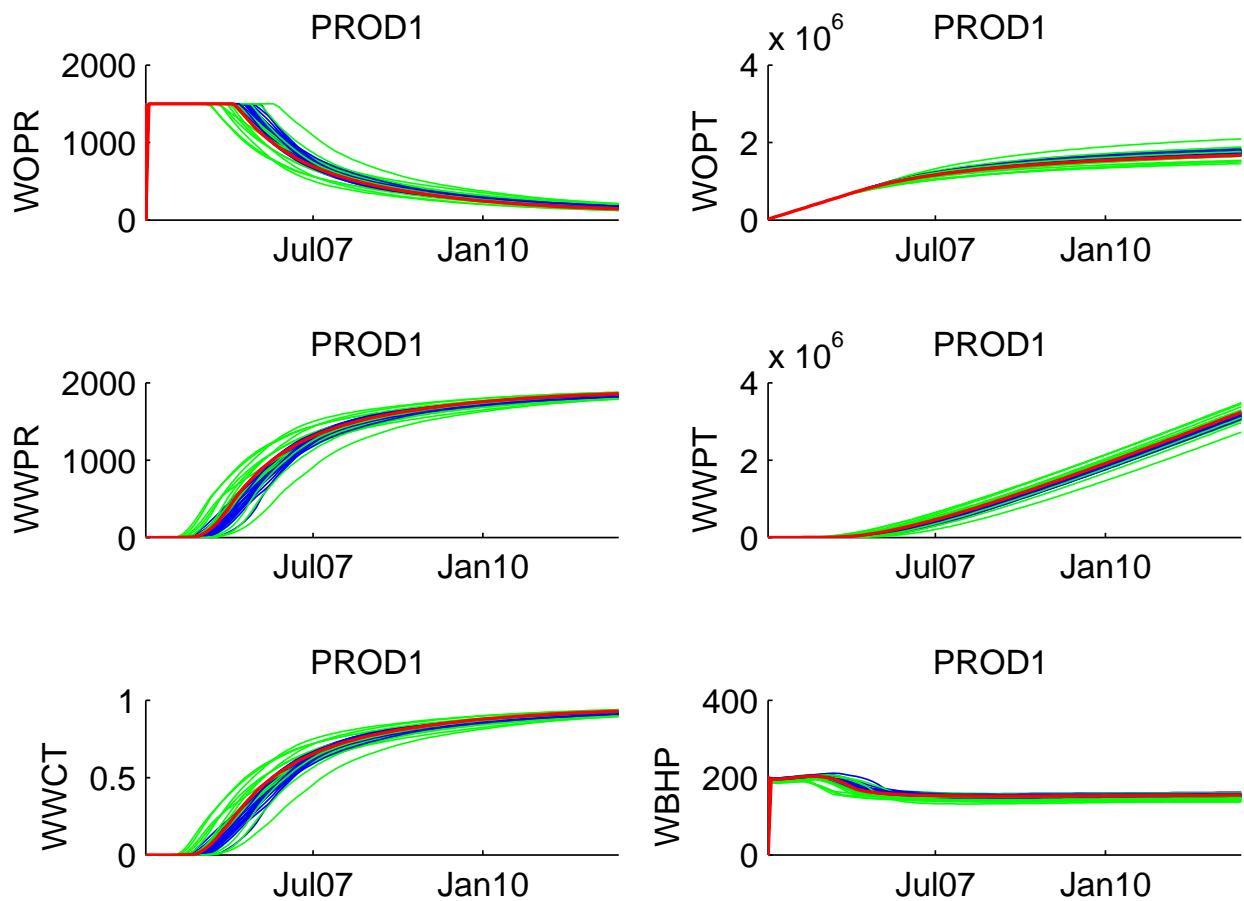
## 1 History match plots



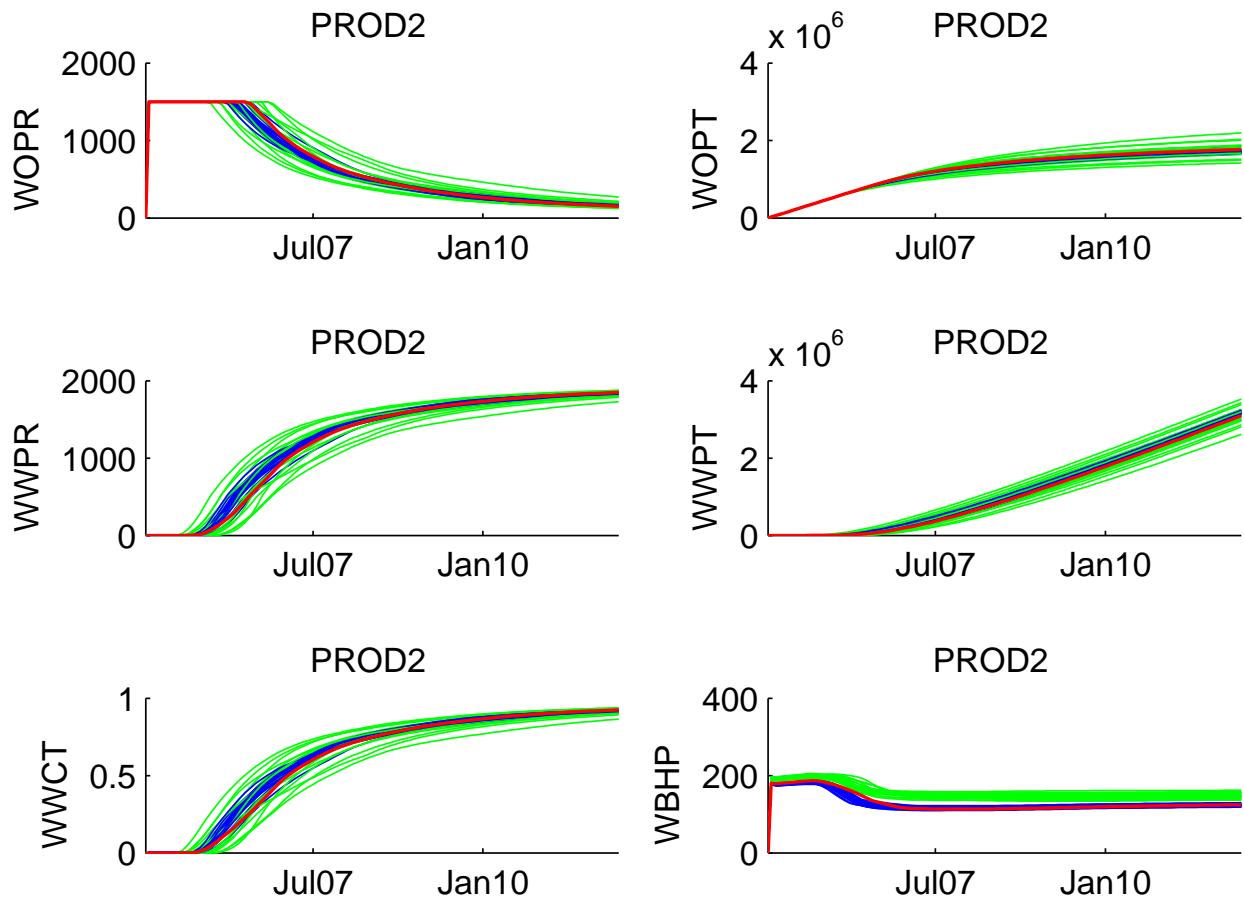
**Figure 1:** FIELD History Matching plots



**Figure 2:** INJ History Matching plots

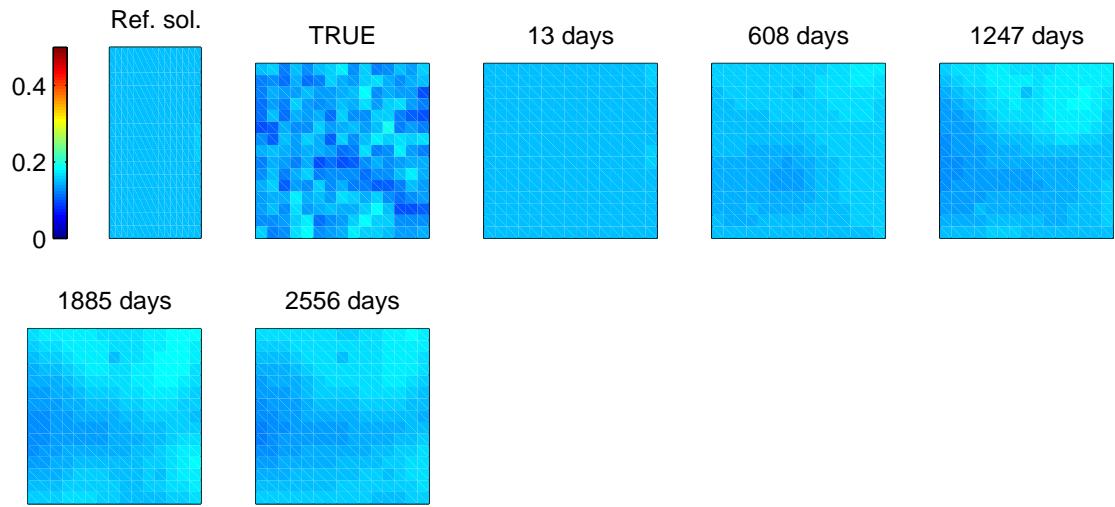


**Figure 3:** PROD1 History Matching plots

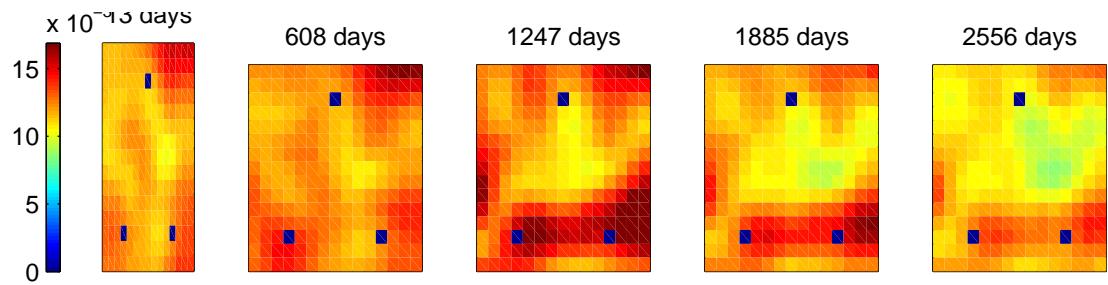


**Figure 4:** PROD2 History Matching plots

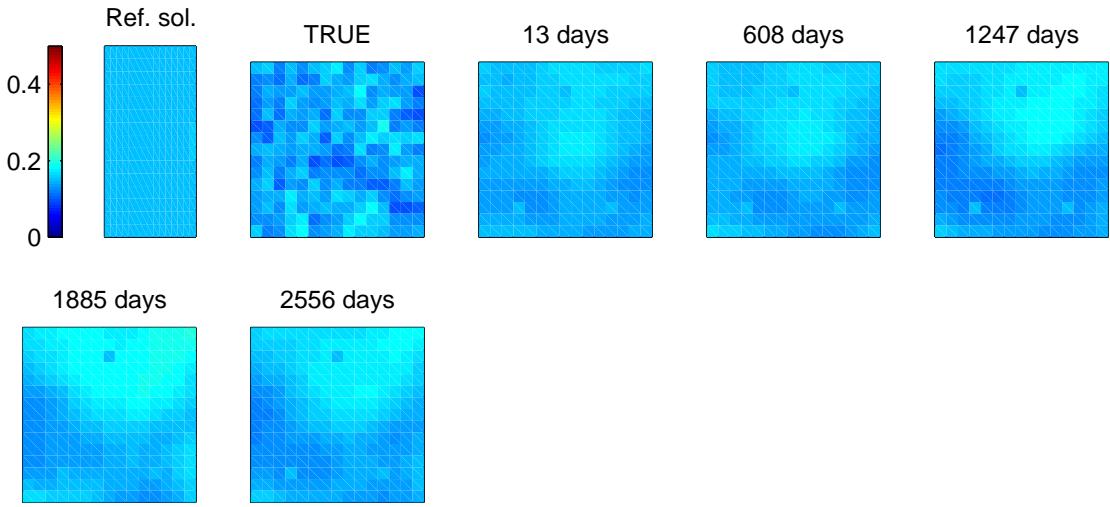
## 2 PORO for layer 1



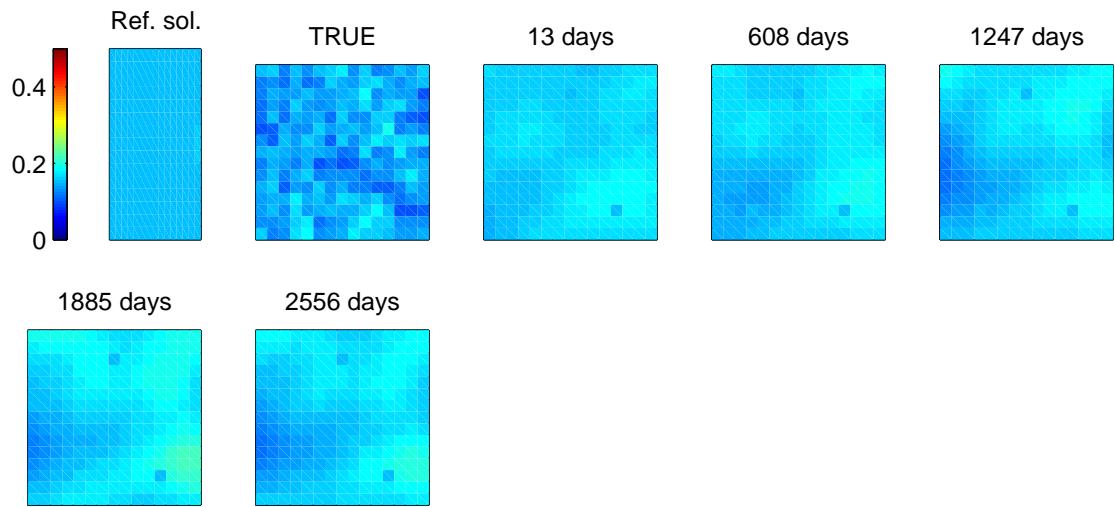
**Figure 5:** PORO mean value for layer 1



**Figure 6:** PORO standard deviation for layer 1

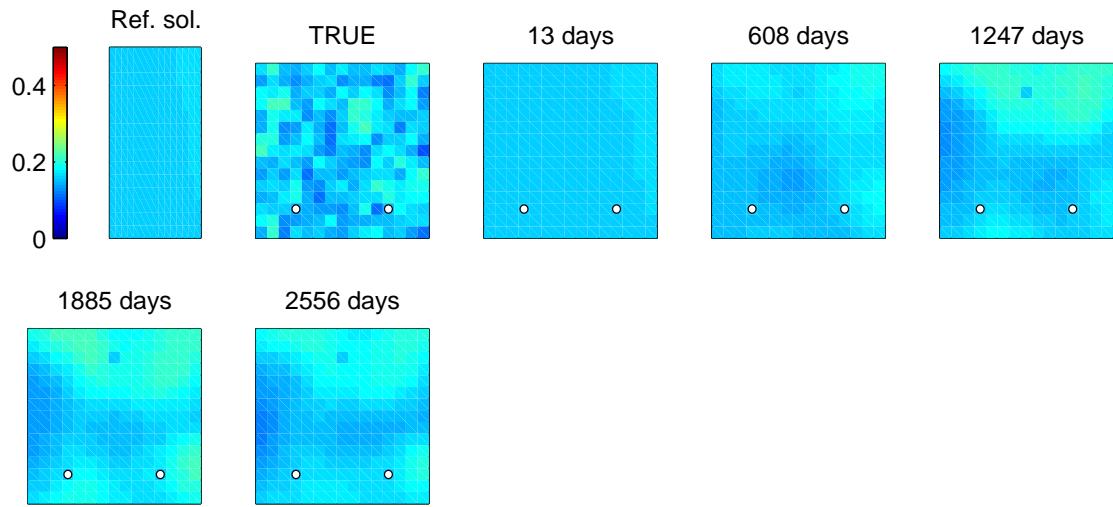


**Figure 7:** Poroosity (PORO) for ensemble member 1 for layer 1

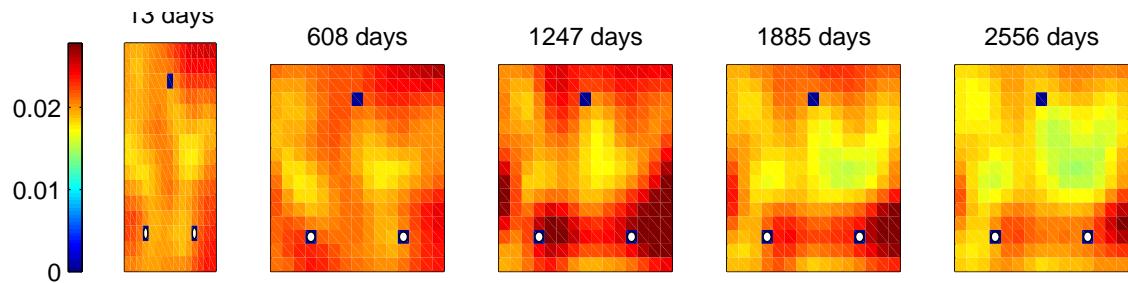


**Figure 8:** Poroosity (PORO) for ensemble member 2 for layer 1

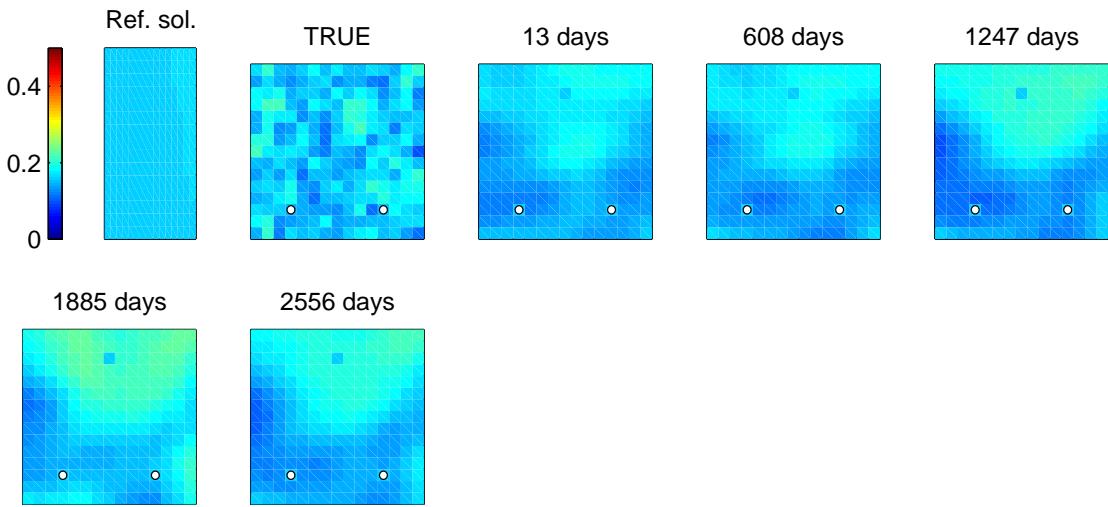
### 3 PORO for layer 2



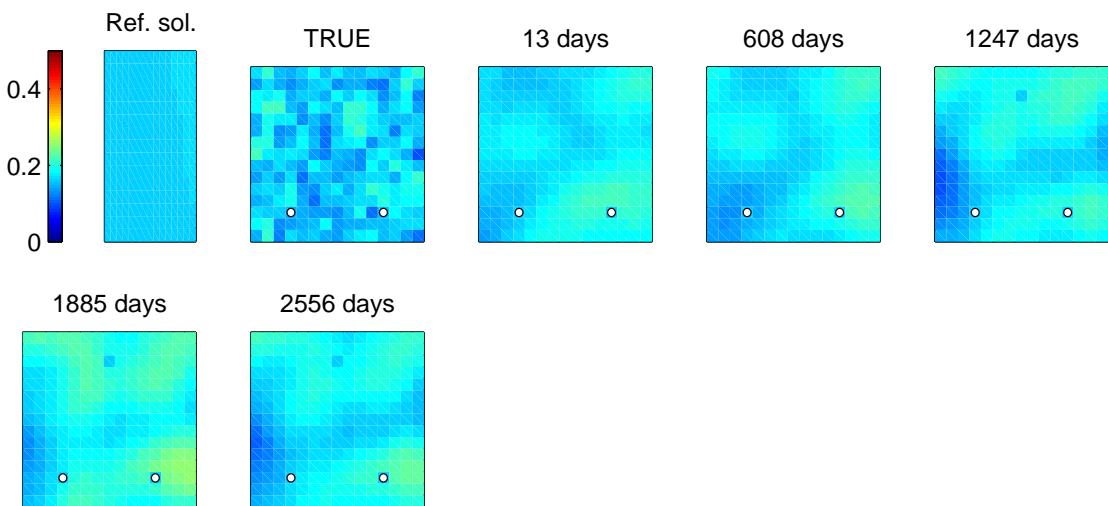
**Figure 9:** PORO mean value for layer 2



**Figure 10:** PORO standard deviation for layer 2

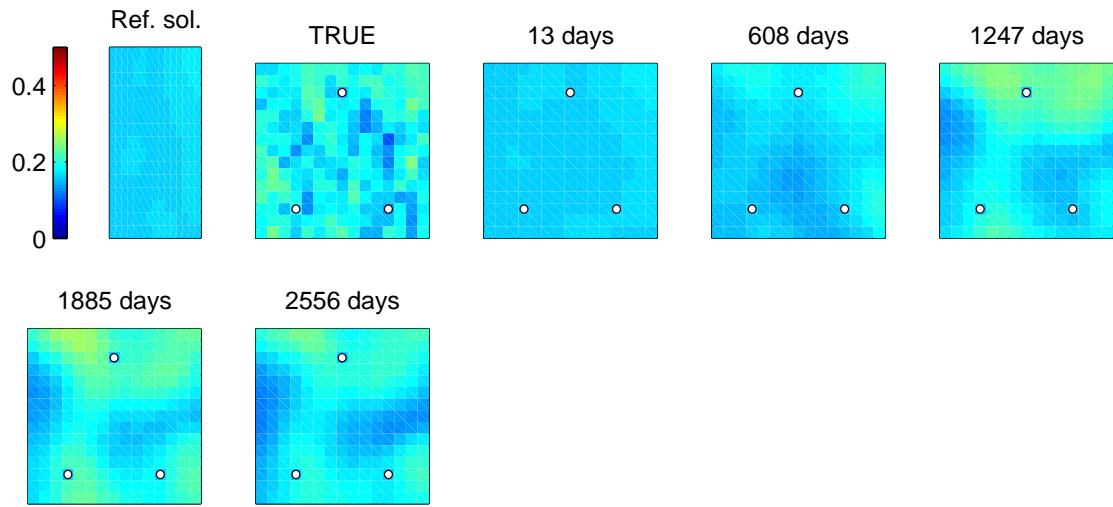


**Figure 11:** Poroosity (PORO) for ensemble member 1 for layer 2

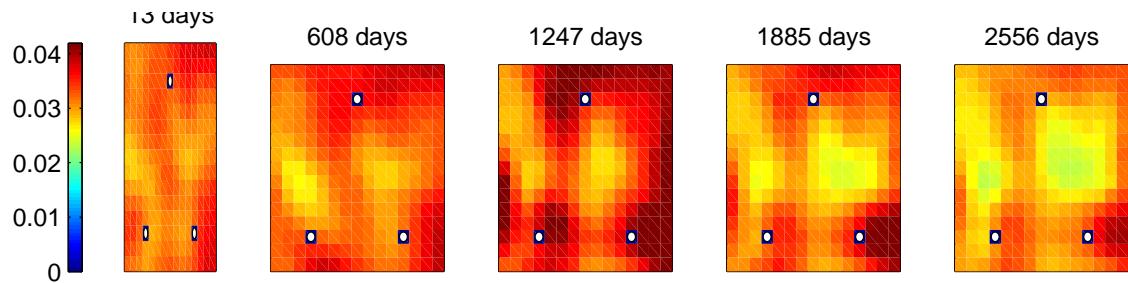


**Figure 12:** Poroosity (PORO) for ensemble member 2 for layer 2

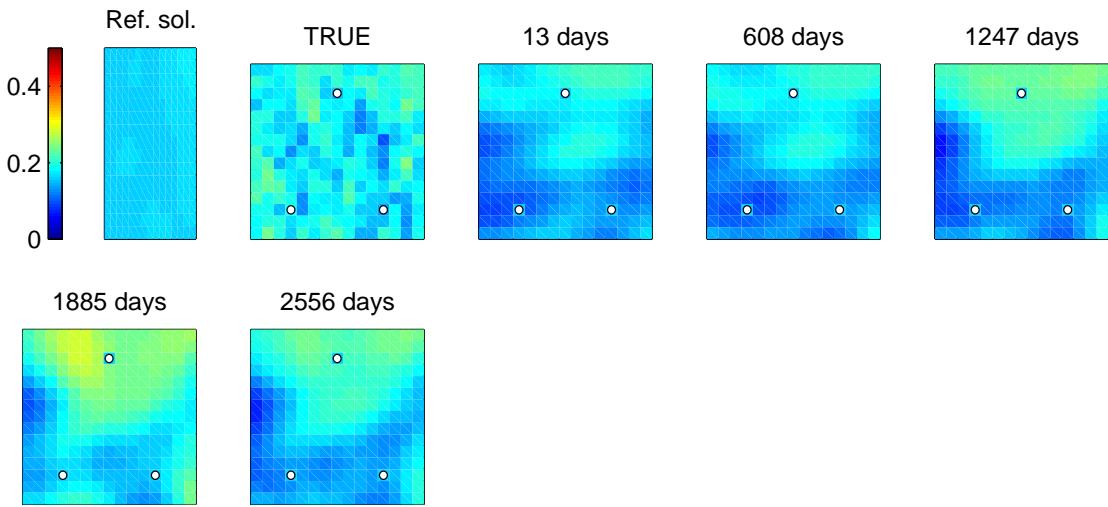
## 4 PORO for layer 3



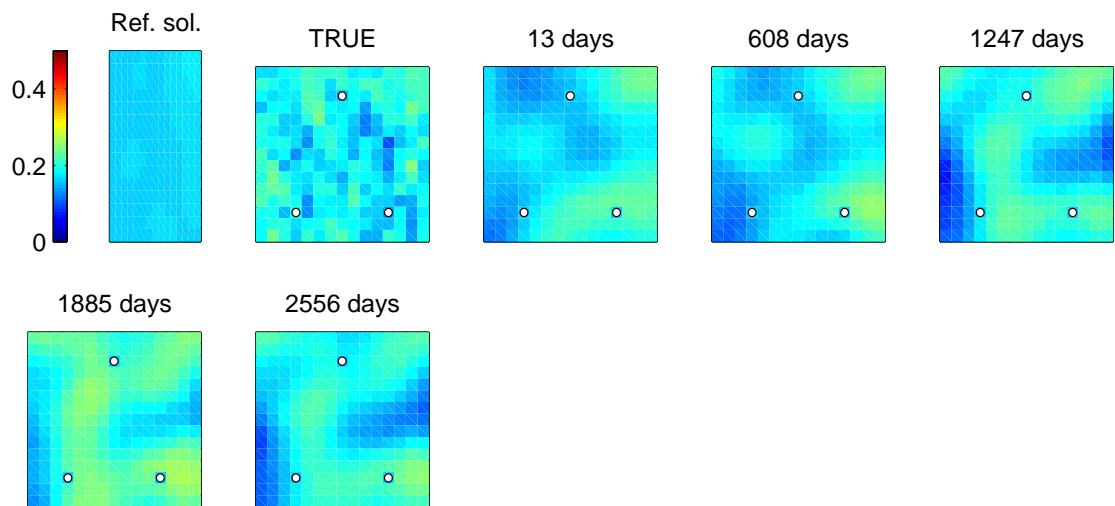
**Figure 13:** PORO mean value for layer 3



**Figure 14:** PORO standard deviation for layer 3

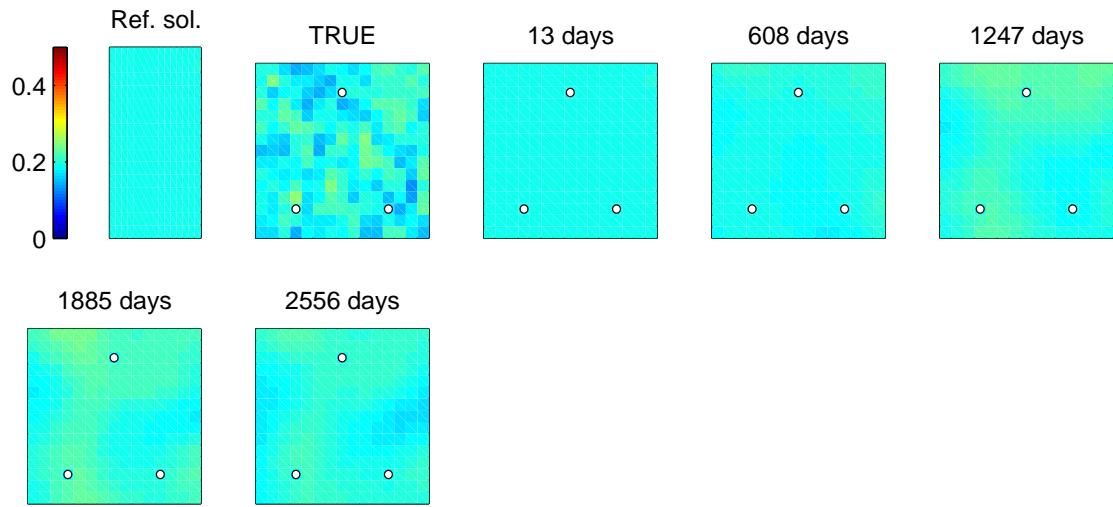


**Figure 15:** PORE for ensemble member 1 for layer 3

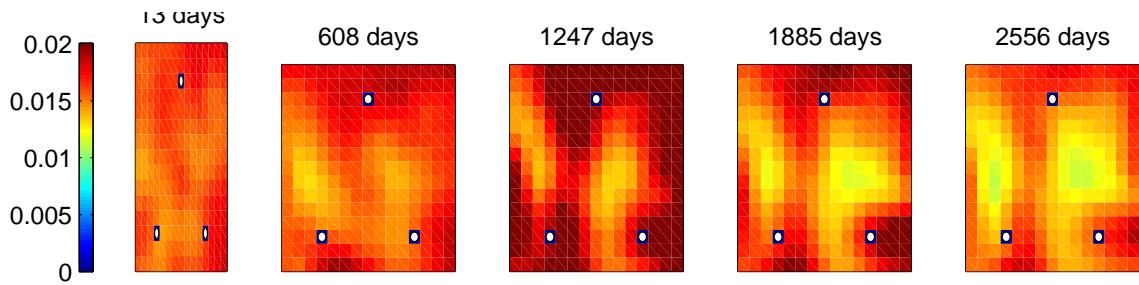


**Figure 16:** PORE for ensemble member 2 for layer 3

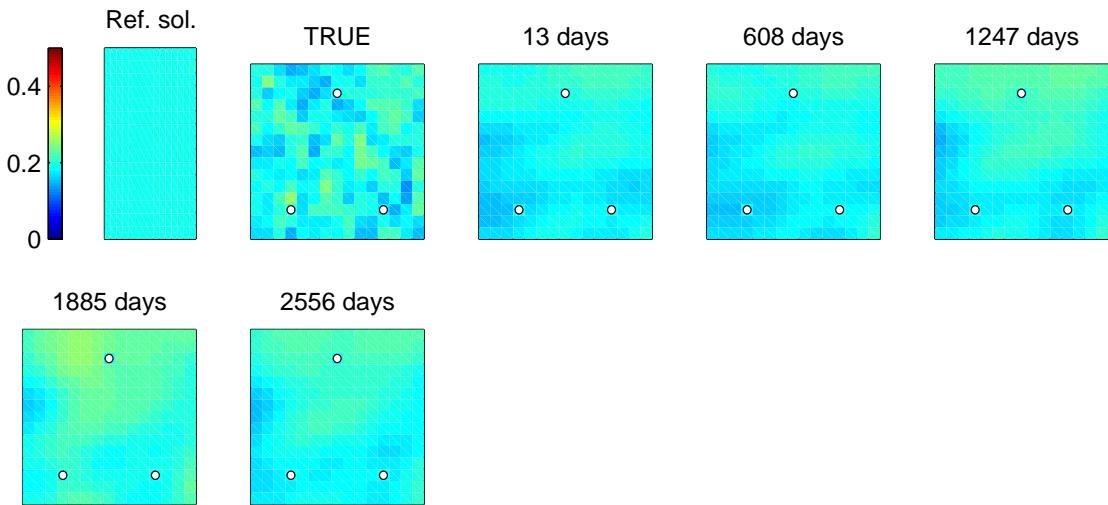
## 5 PORO for layer 4



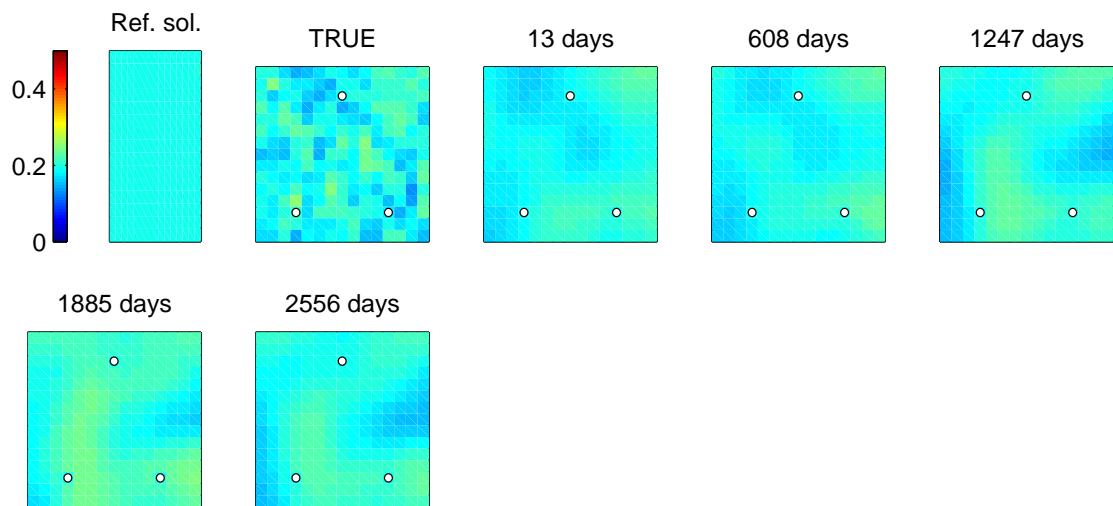
**Figure 17:** PORO mean value for layer 4



**Figure 18:** PORO standard deviation for layer 4

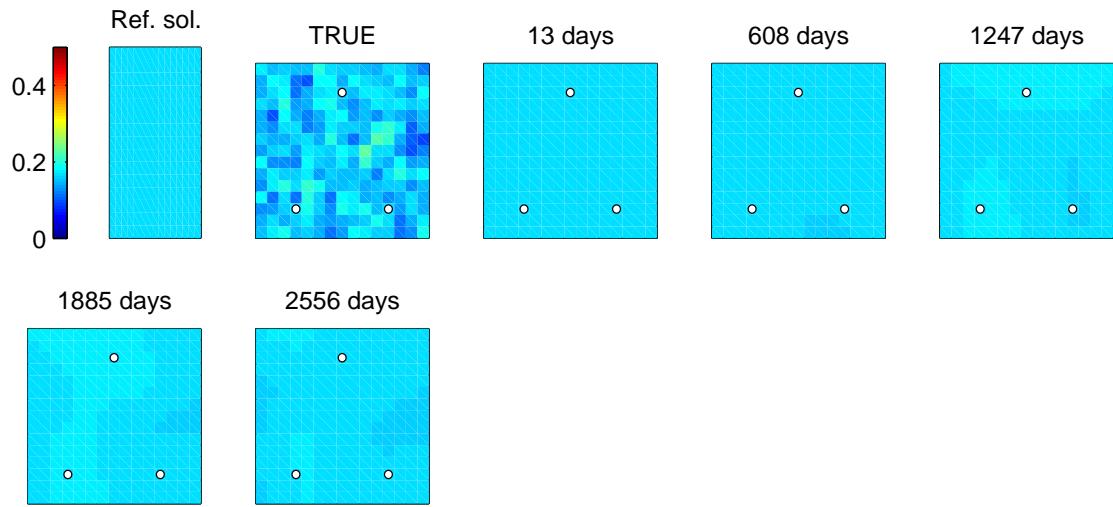


**Figure 19:** Poroosity (PORO) for ensemble member 1 for layer 4

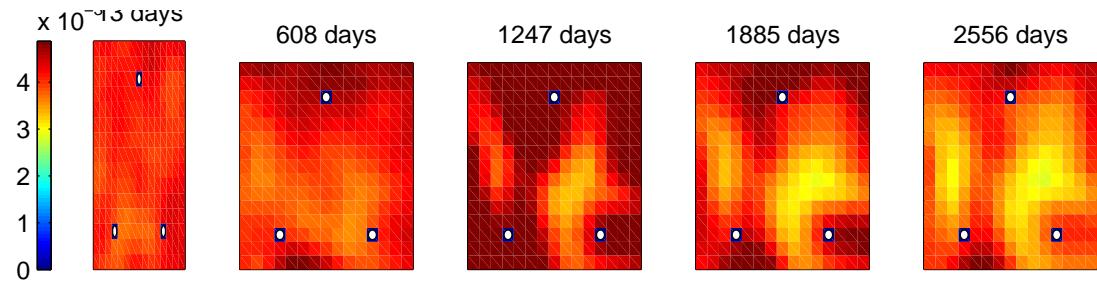


**Figure 20:** Poroosity (PORO) for ensemble member 2 for layer 4

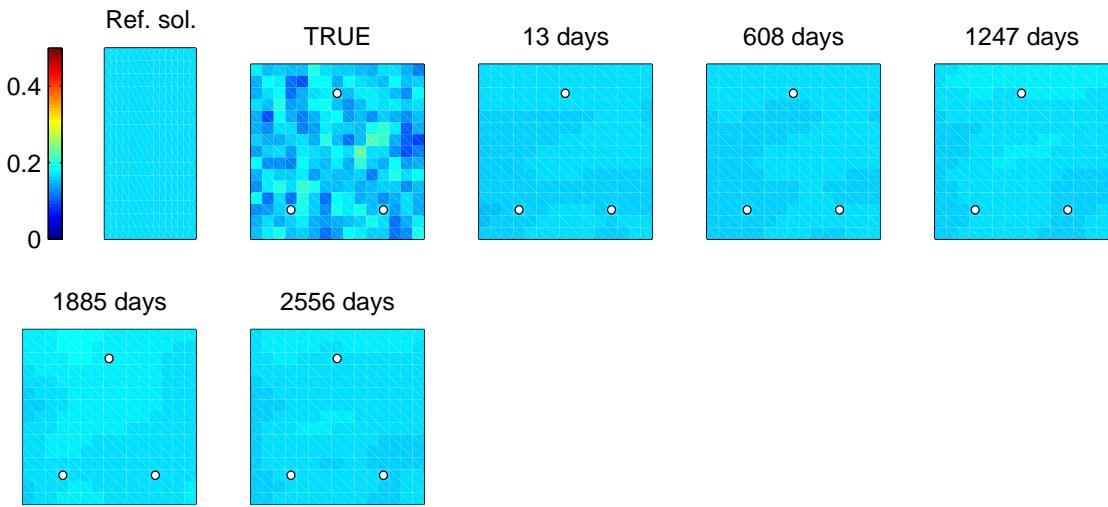
## 6 PORO for layer 5



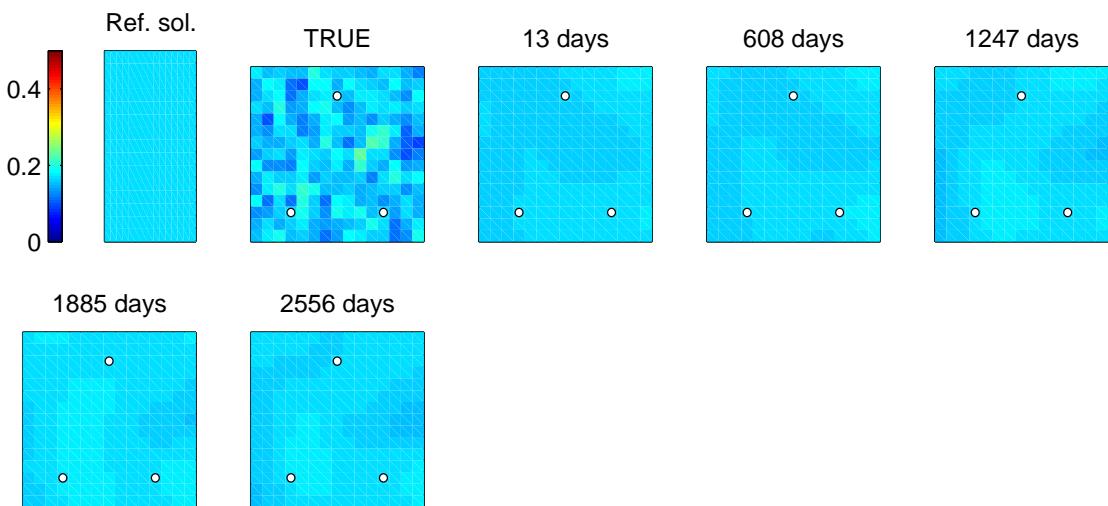
**Figure 21:** PORO mean value for layer 5



**Figure 22:** PORO standard deviation for layer 5

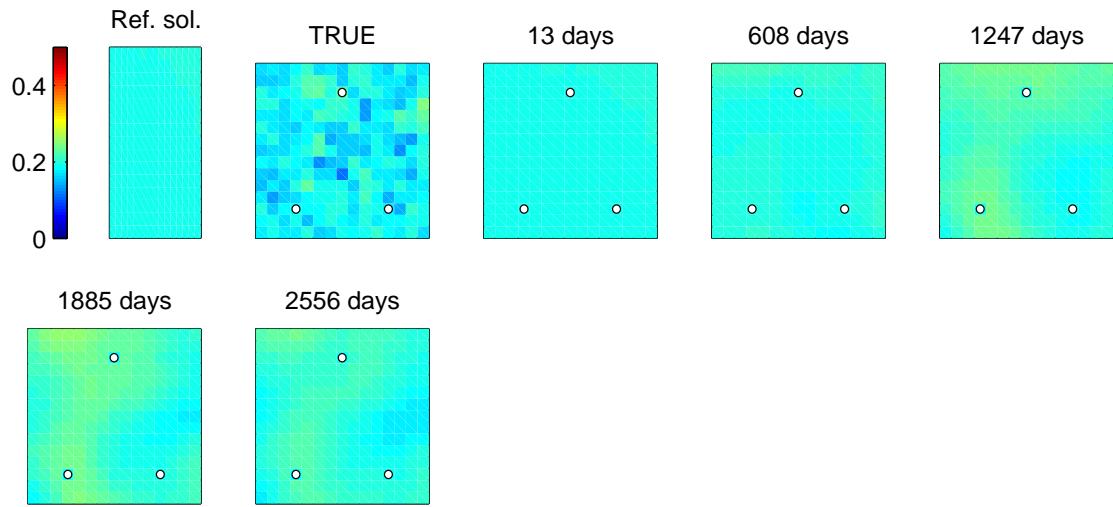


**Figure 23:** PORE for ensemble member 1 for layer 5

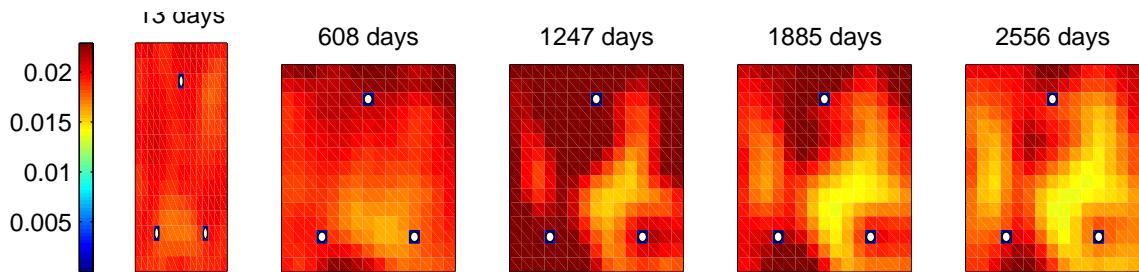


**Figure 24:** PORE for ensemble member 2 for layer 5

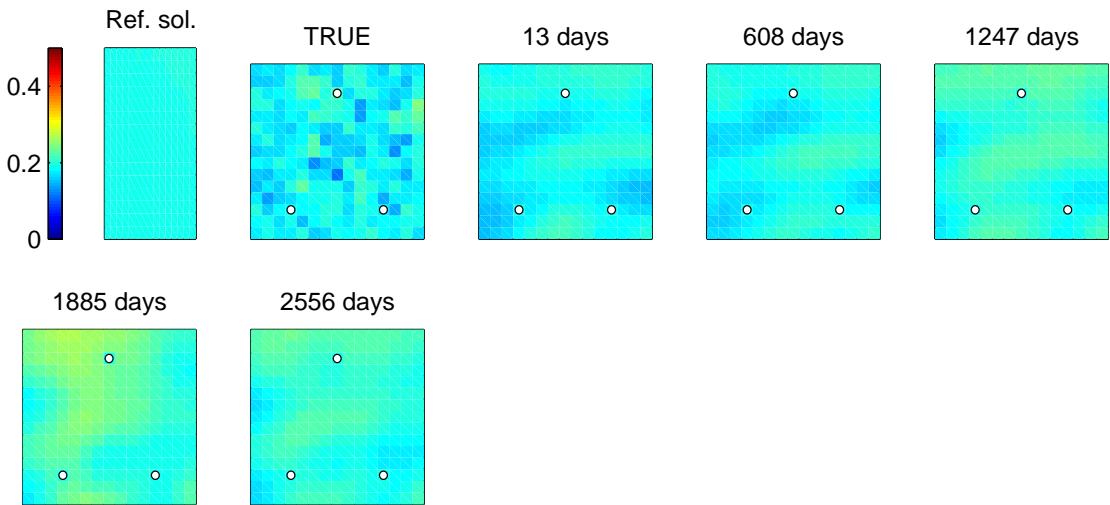
## 7 PORO for layer 6



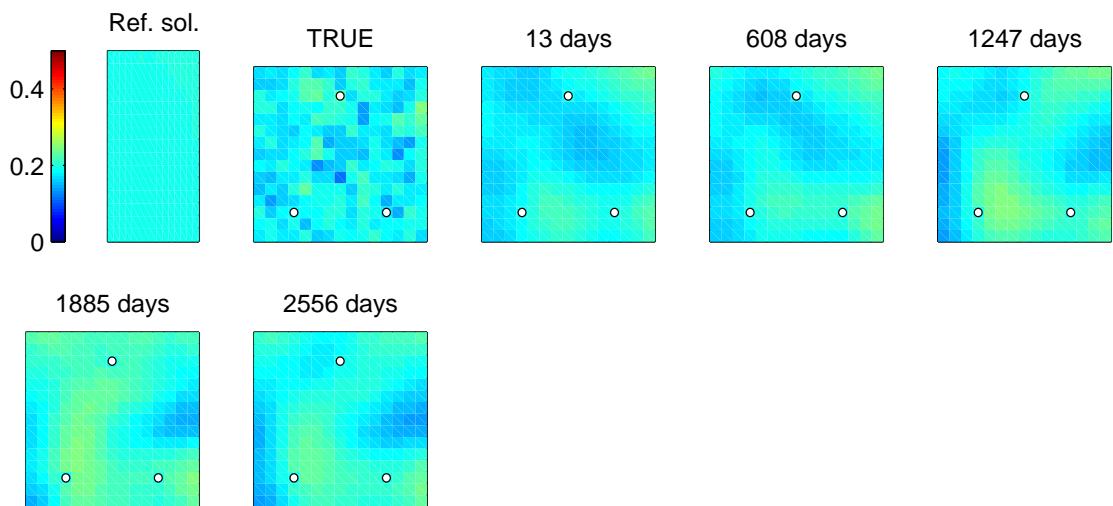
**Figure 25:** PORO mean value for layer 6



**Figure 26:** PORO standard deviation for layer 6

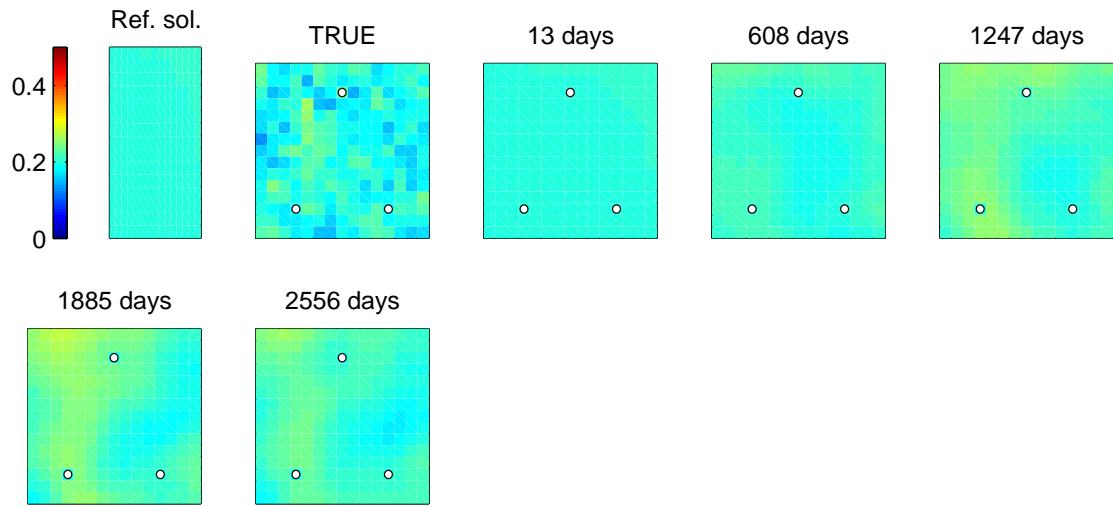


**Figure 27:** PORE for ensemble member 1 for layer 6

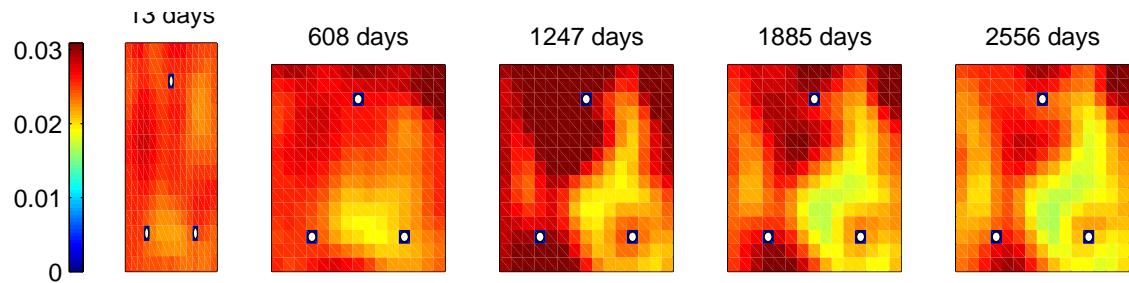


**Figure 28:** PORE for ensemble member 2 for layer 6

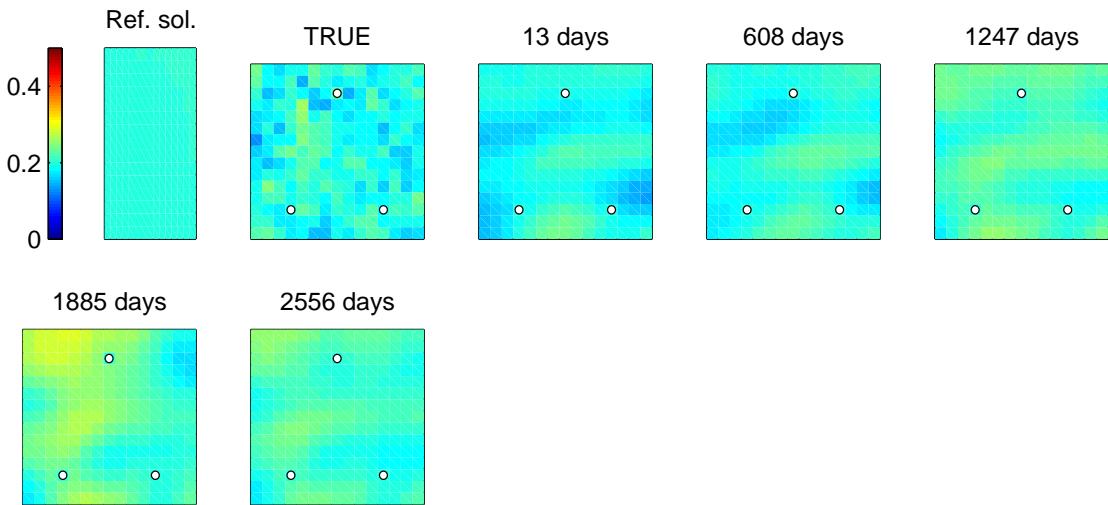
## 8 PORO for layer 7



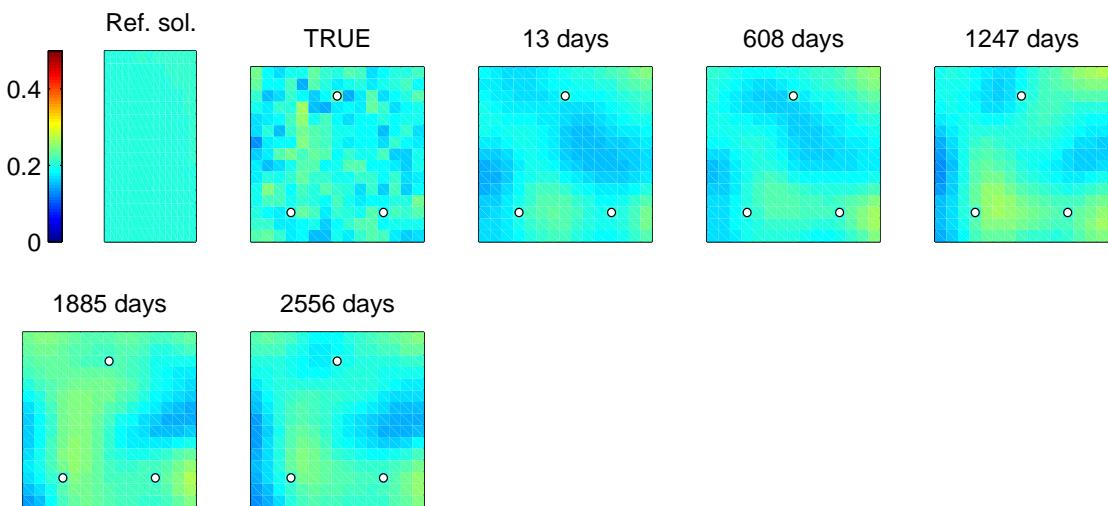
**Figure 29:** PORO mean value for layer 7



**Figure 30:** PORO standard deviation for layer 7

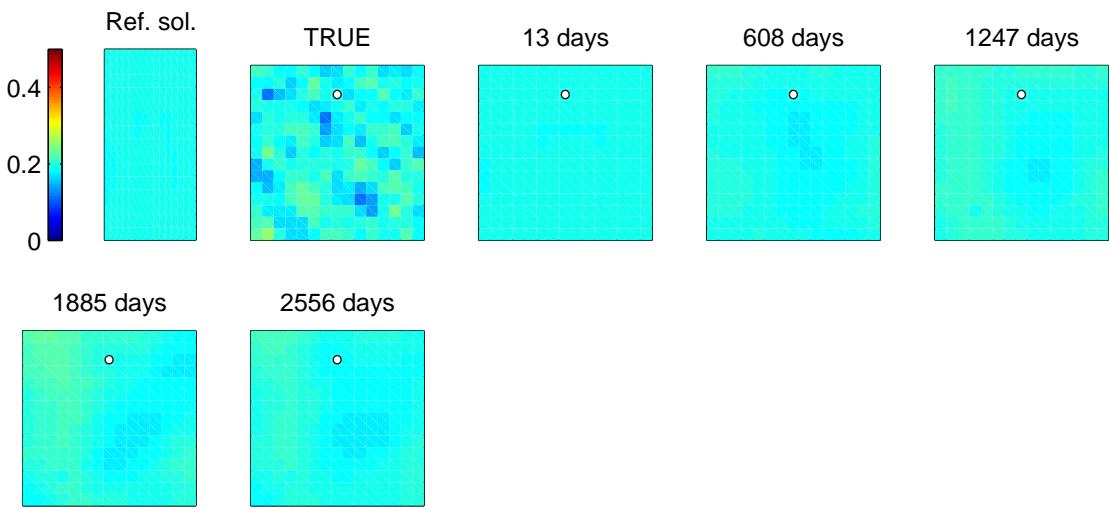


**Figure 31:** PORE for ensemble member 1 for layer 7

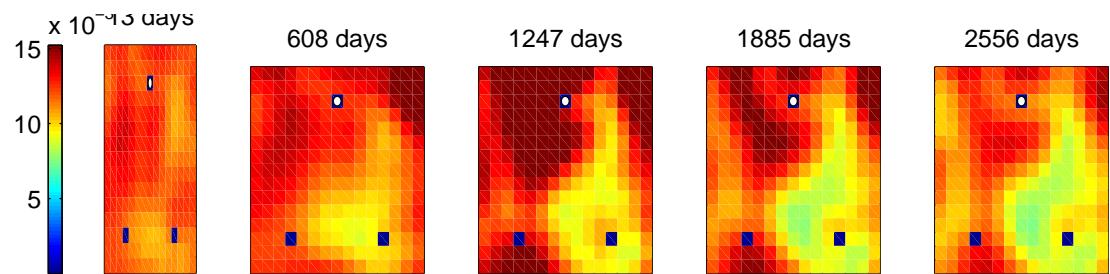


**Figure 32:** PORE for ensemble member 2 for layer 7

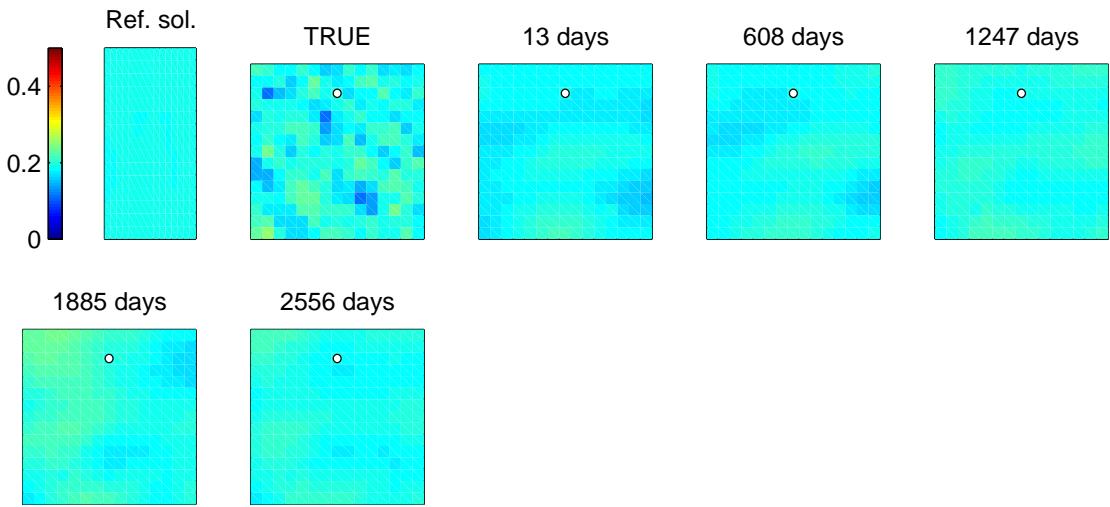
## 9 PORO for layer 8



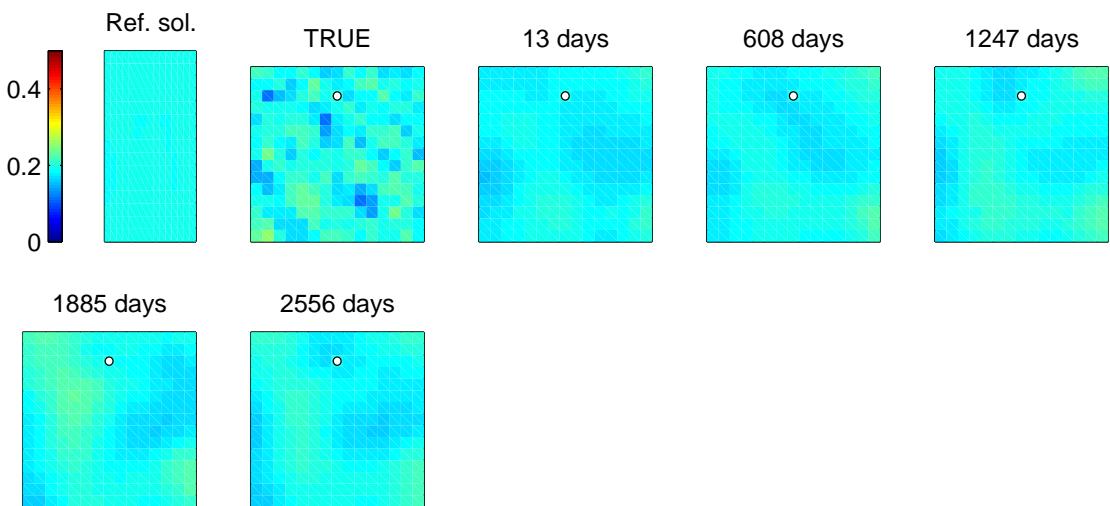
**Figure 33:** PORO mean value for layer 8



**Figure 34:** PORO standard deviation for layer 8

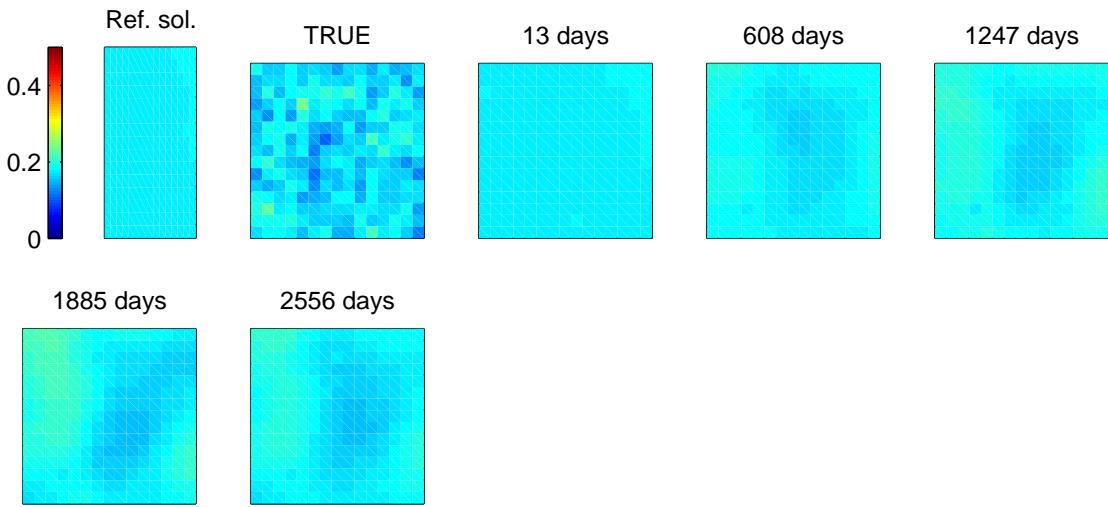


**Figure 35:** Poroosity (PORO) for ensemble member 1 for layer 8

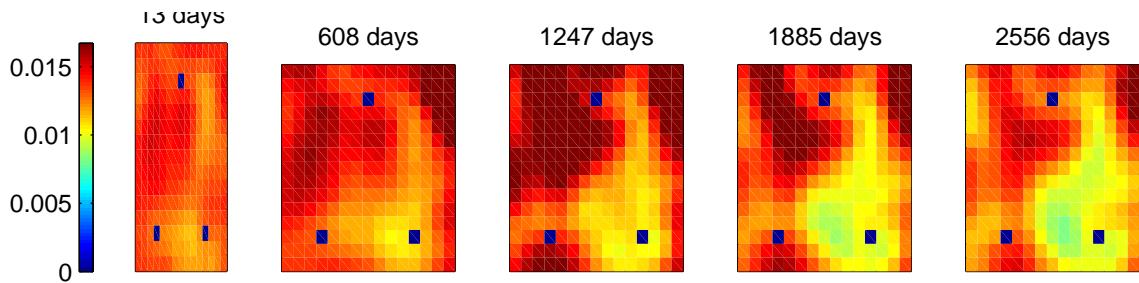


**Figure 36:** Poroosity (PORO) for ensemble member 2 for layer 8

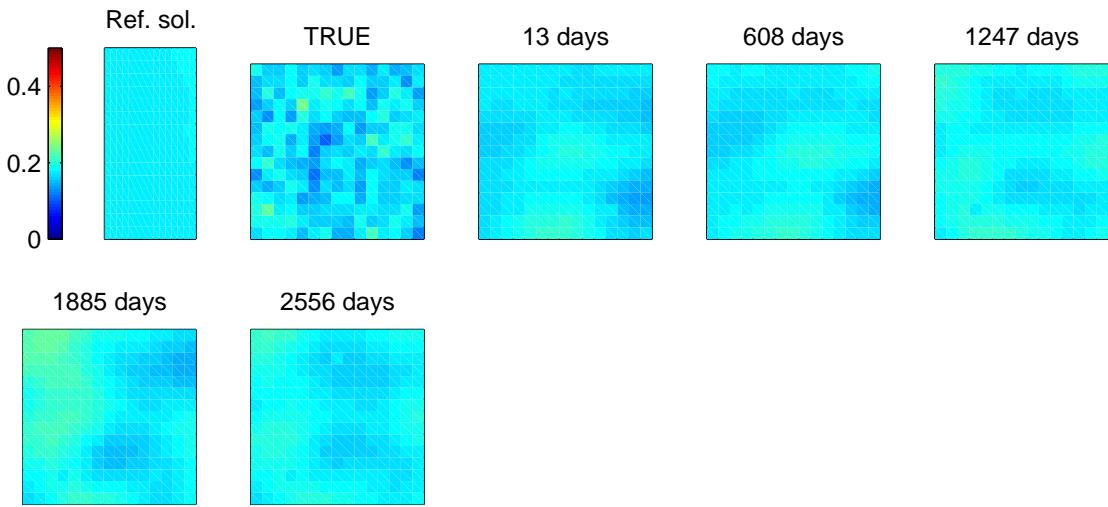
## 10 PORE for layer 9



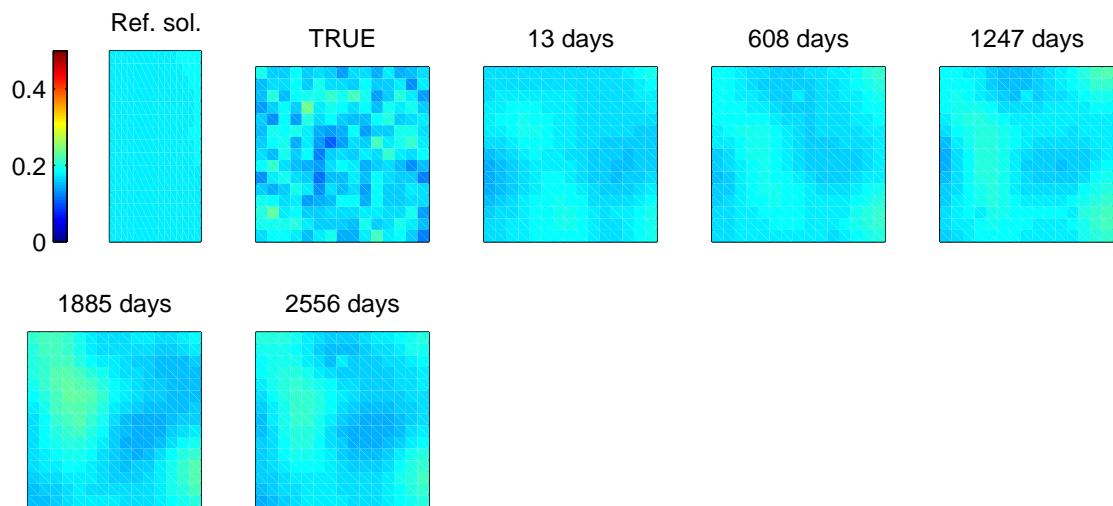
**Figure 37:** PORE mean value for layer 9



**Figure 38:** PORE standard deviation for layer 9

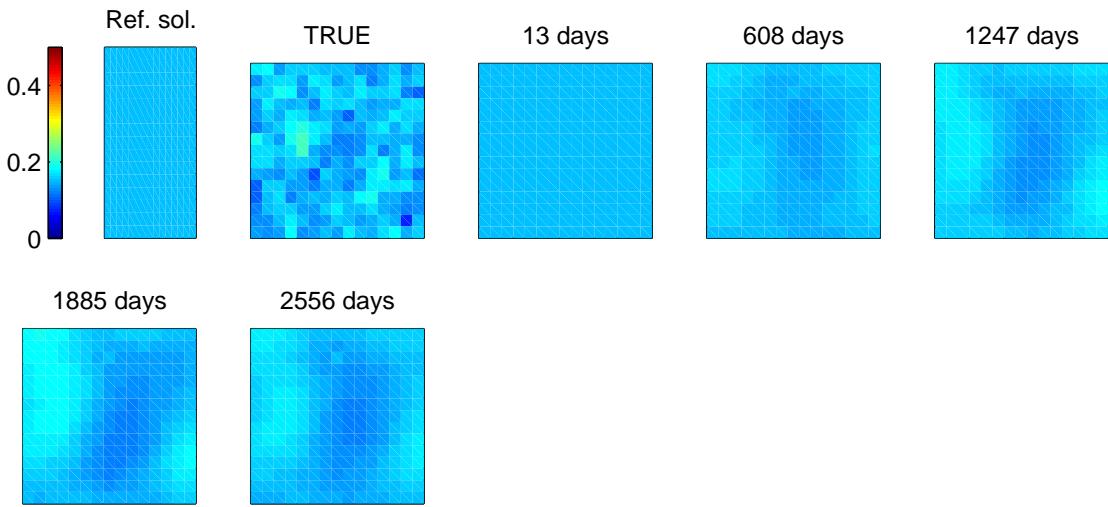


**Figure 39:** PORE for ensemble member 1 for layer 9

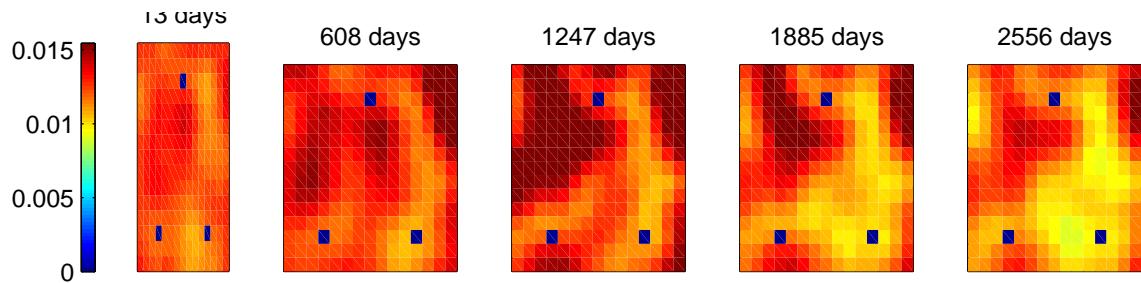


**Figure 40:** PORE for ensemble member 2 for layer 9

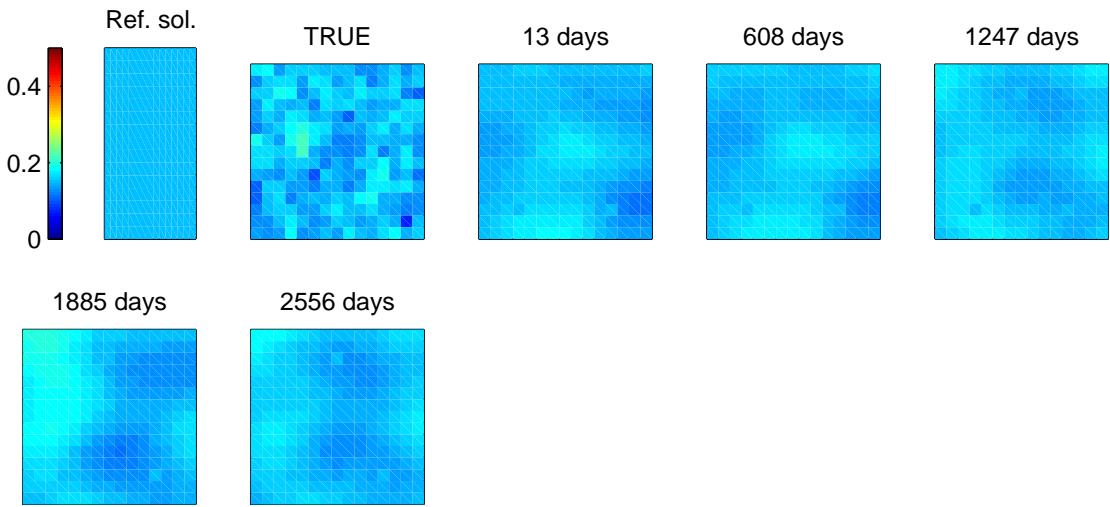
## 11 PORE for layer 10



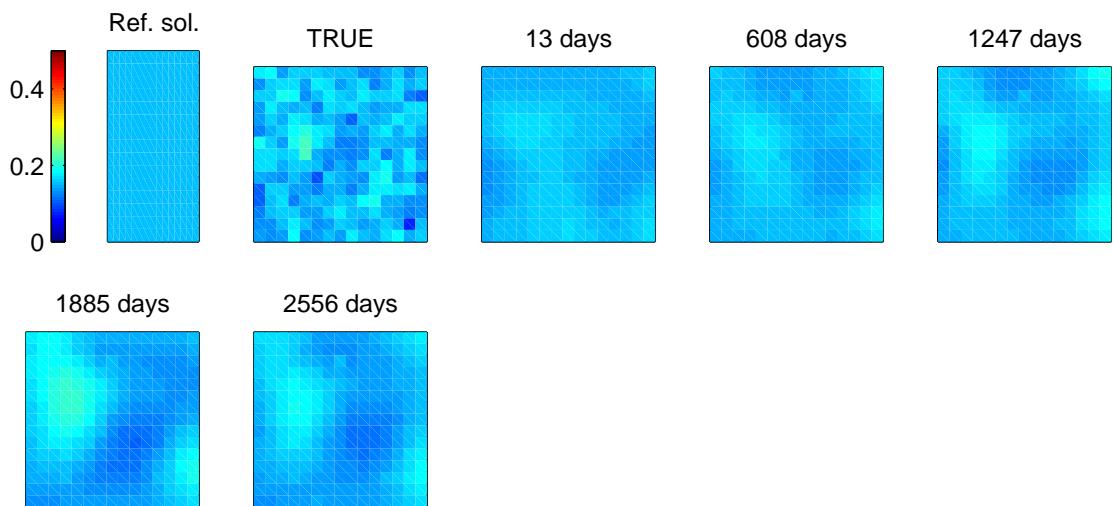
**Figure 41:** PORE mean value for layer 10



**Figure 42:** PORE standard deviation for layer 10

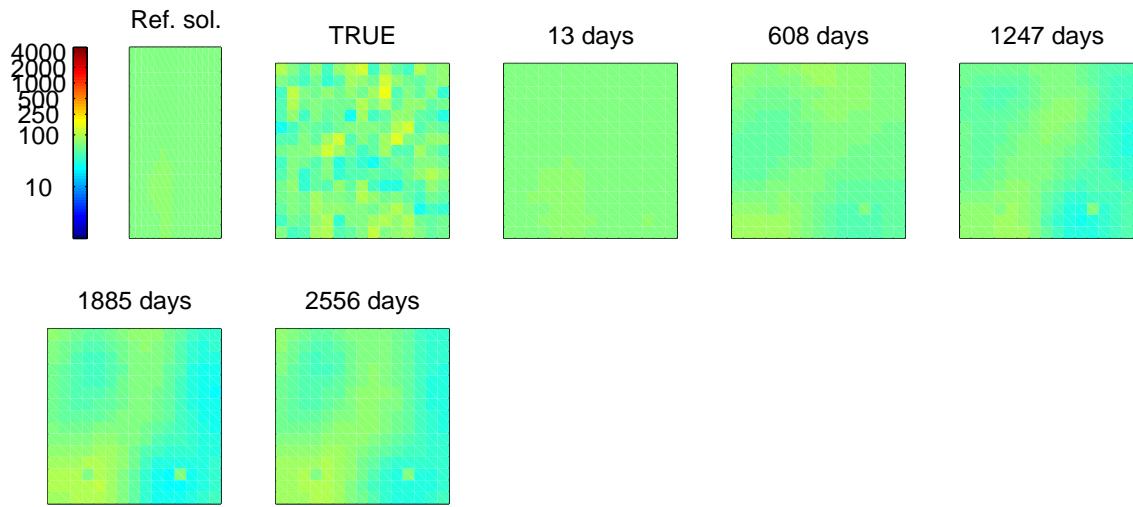


**Figure 43:** Poroosity (PORO) for ensemble member 1 for layer 10

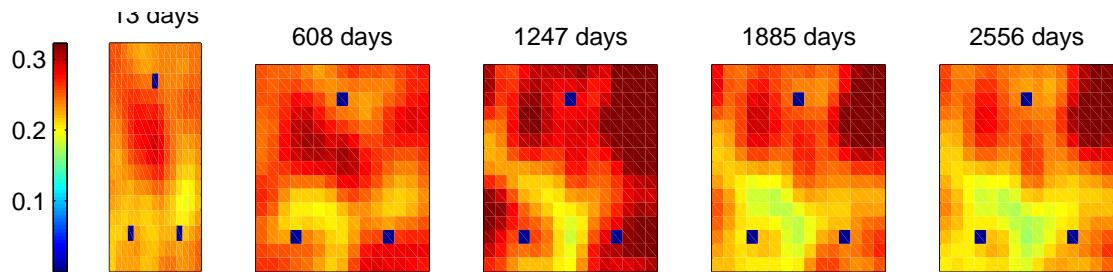


**Figure 44:** Poroosity (PORO) for ensemble member 2 for layer 10

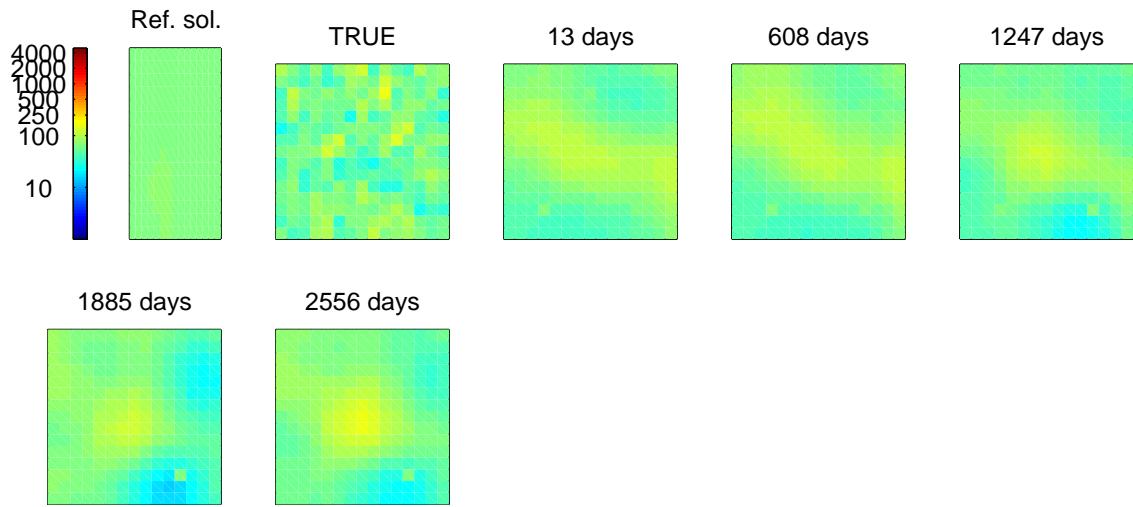
## 12 PERMX for layer 1



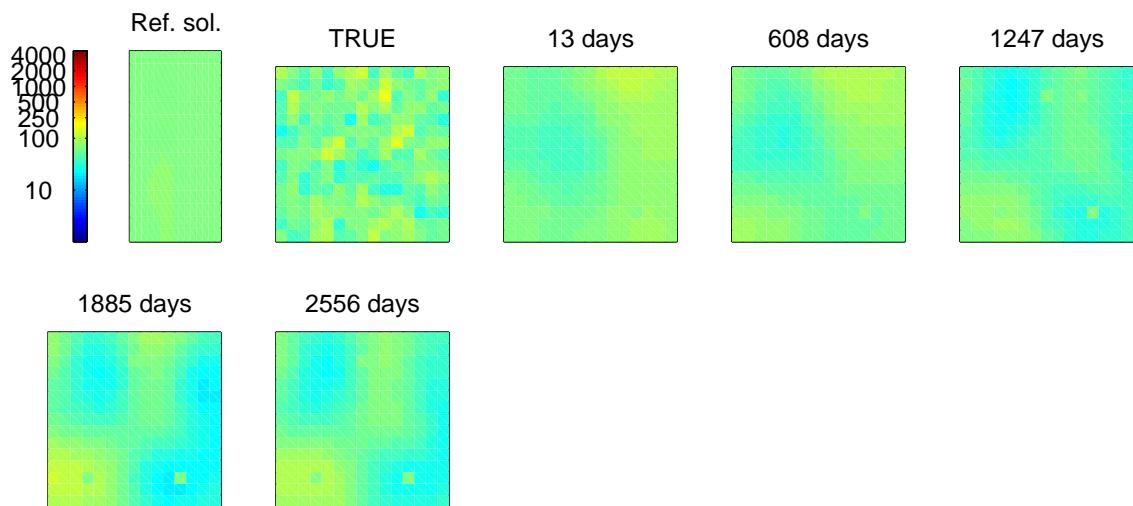
**Figure 45:** PERMX mean value for layer 1



**Figure 46:** PERMX standard deviation for layer 1

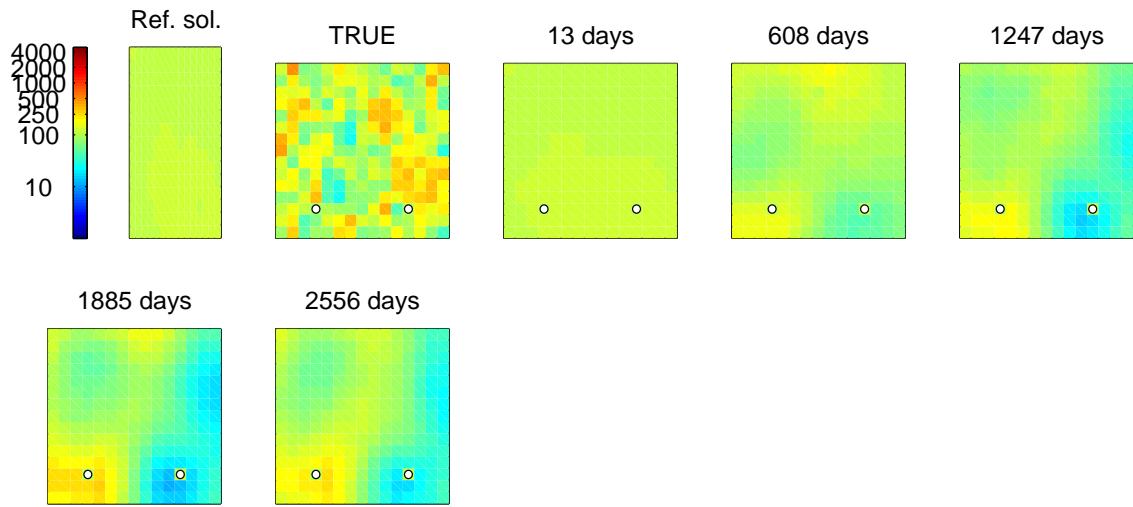


**Figure 47:** PERMX for ensemble member 1 for layer 1

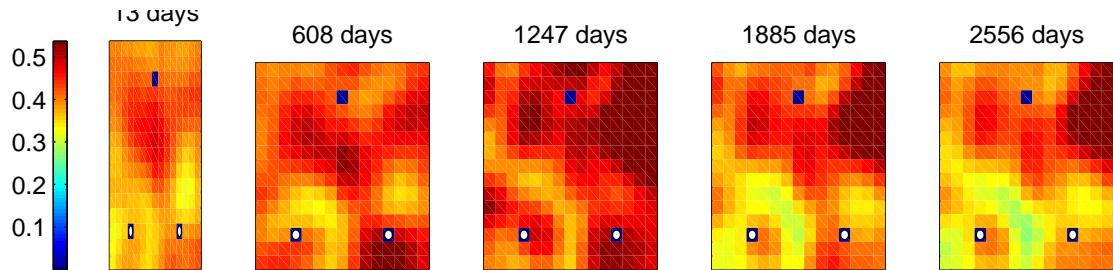


**Figure 48:** PERMX for ensemble member 2 for layer 1

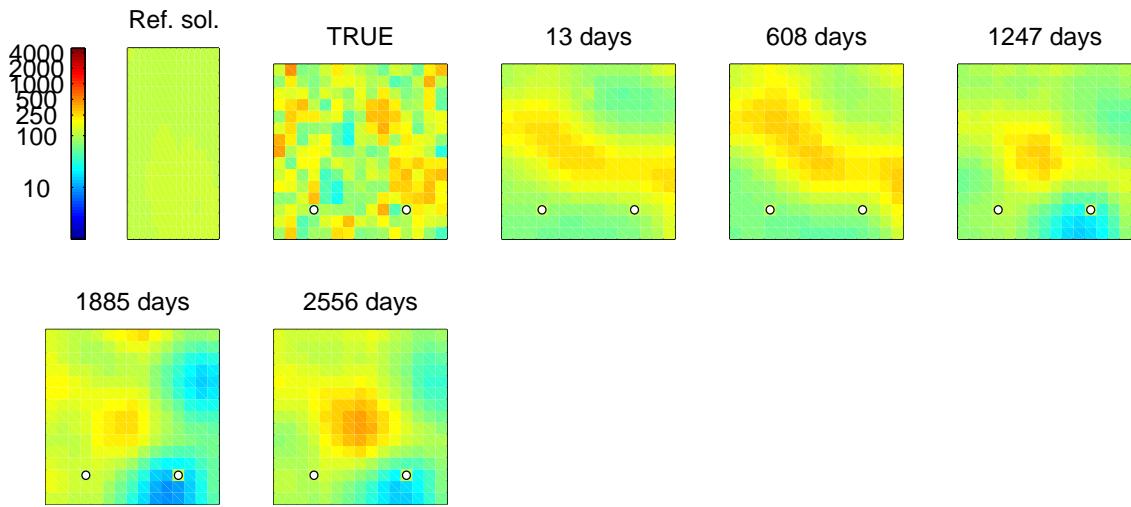
### 13 PERMX for layer 2



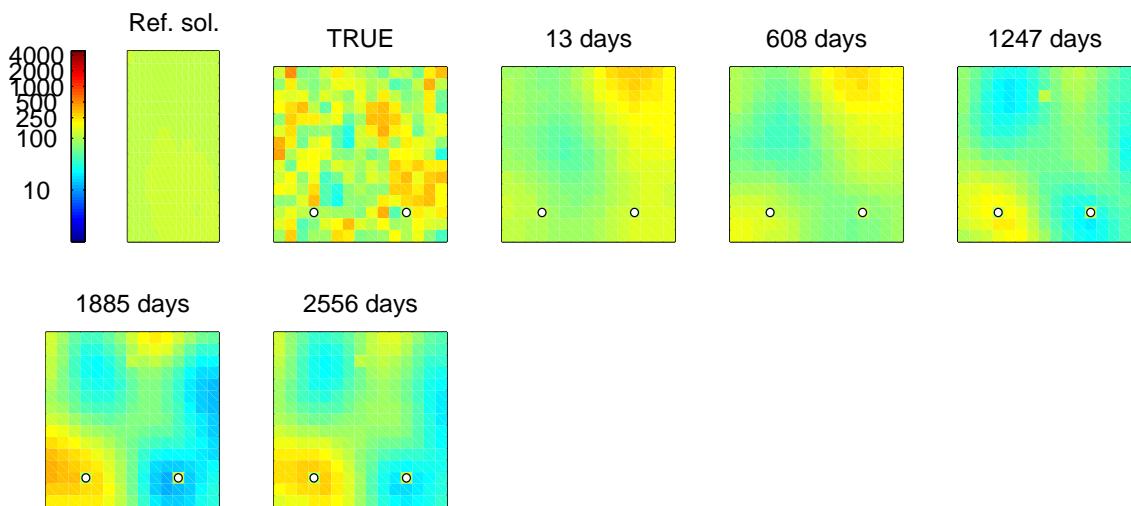
**Figure 49:** PERMX mean value for layer 2



**Figure 50:** PERMX standard deviation for layer 2

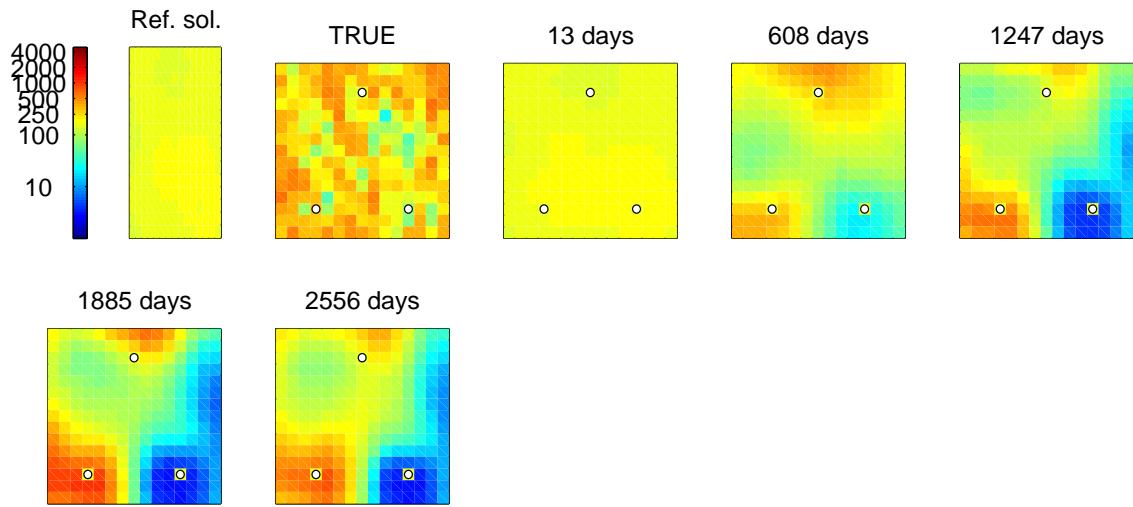


**Figure 51:** PERMX for ensemble member 1 for layer 2

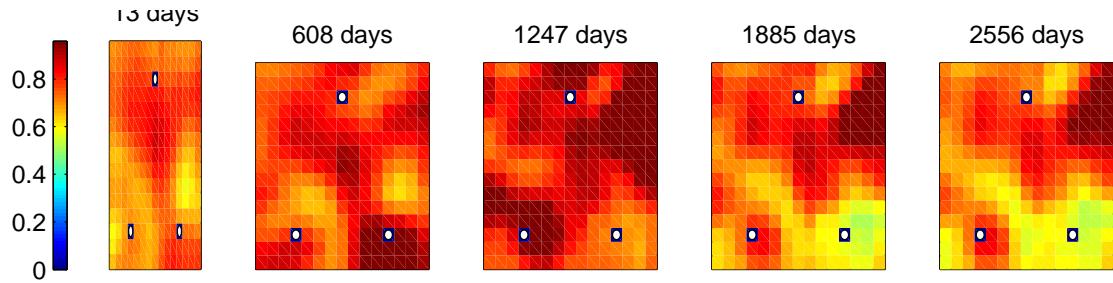


**Figure 52:** PERMX for ensemble member 2 for layer 2

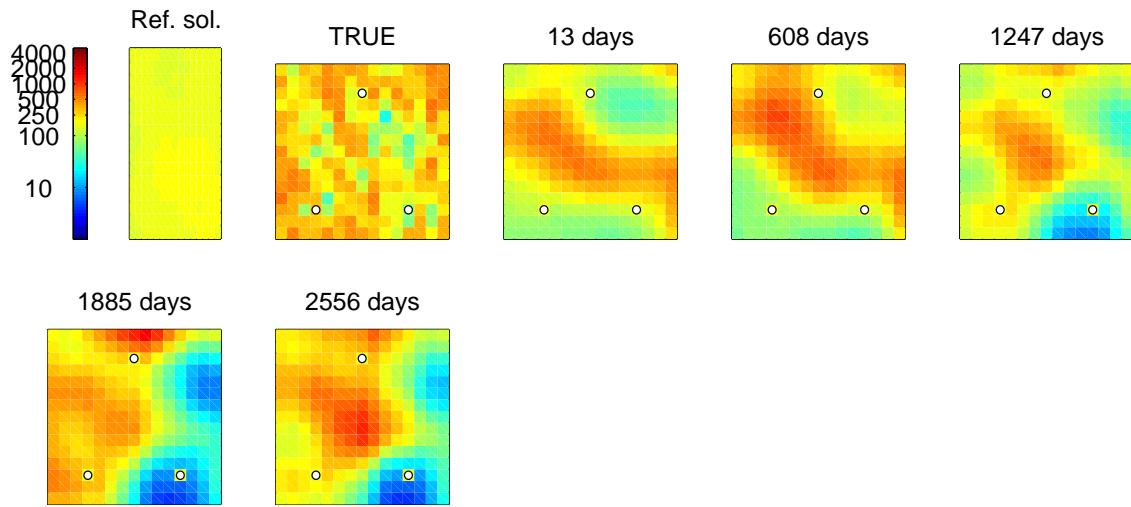
## 14 PERMX for layer 3



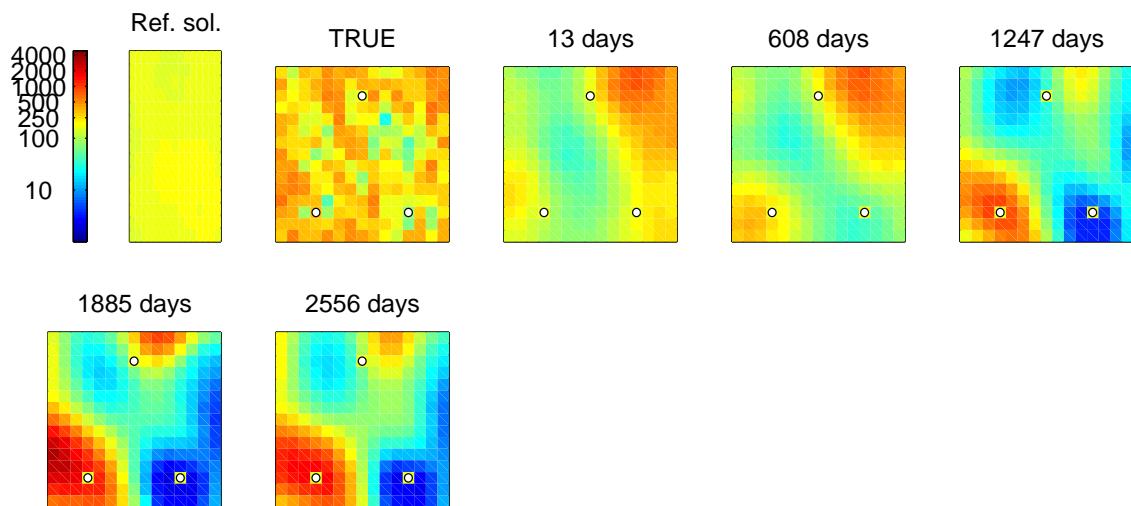
**Figure 53:** PERMX mean value for layer 3



**Figure 54:** PERMX standard deviation for layer 3

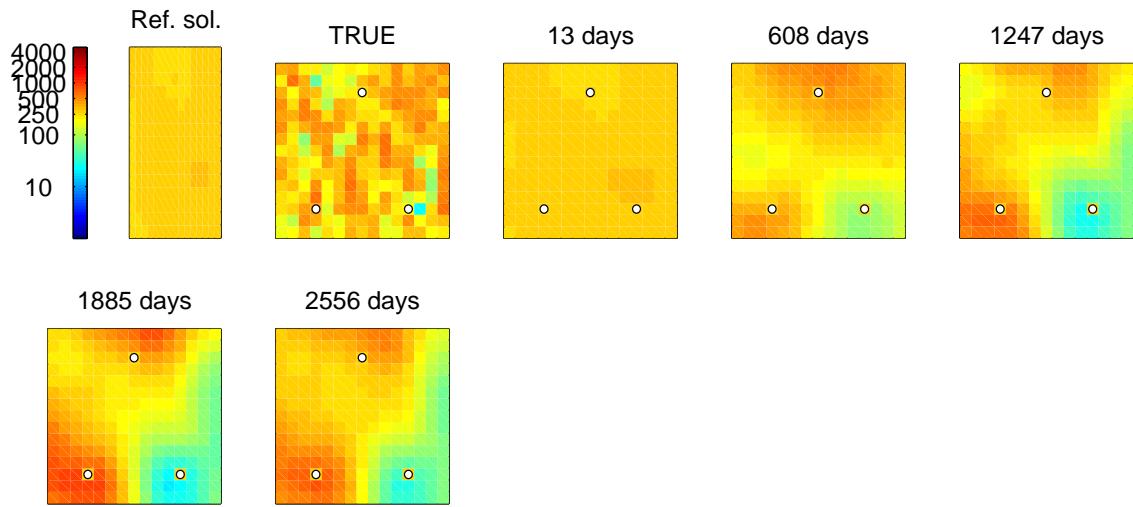


**Figure 55:** PERMX for ensemble member 1 for layer 3

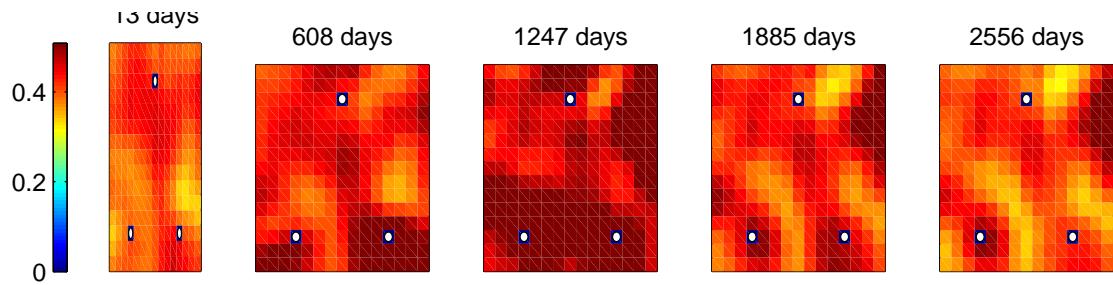


**Figure 56:** PERMX for ensemble member 2 for layer 3

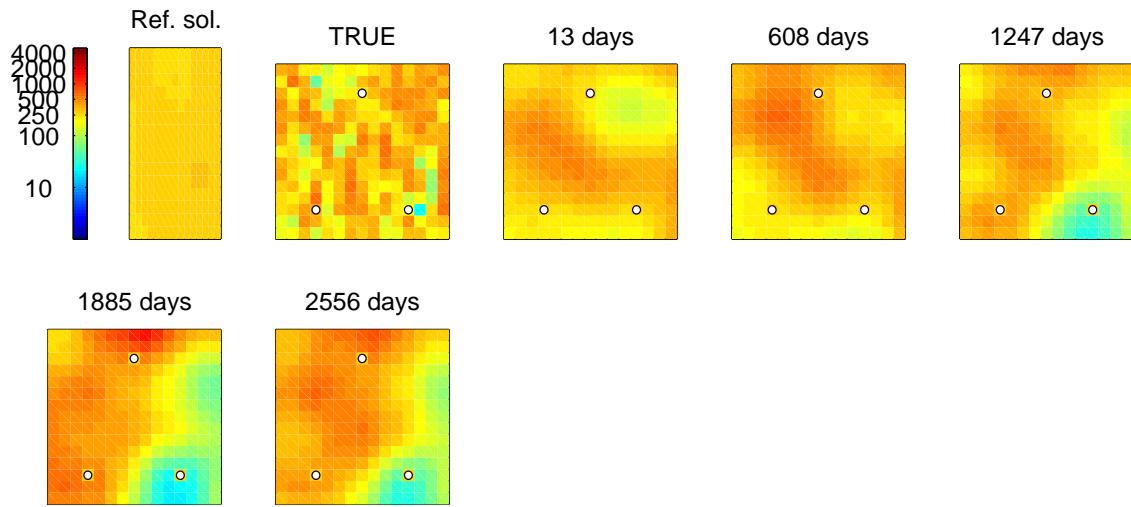
## 15 PERMX for layer 4



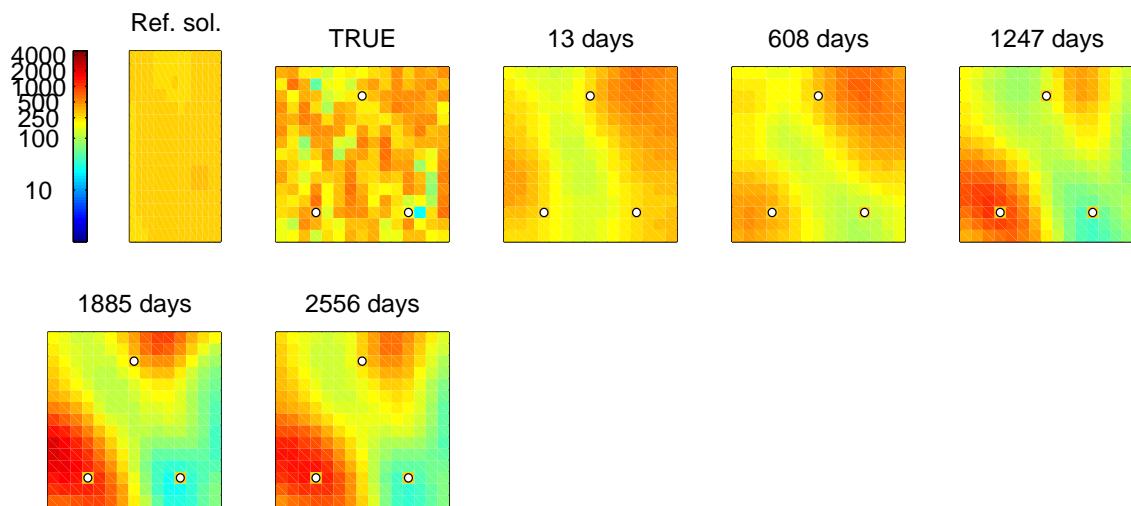
**Figure 57:** PERMX mean value for layer 4



**Figure 58:** PERMX standard deviation for layer 4

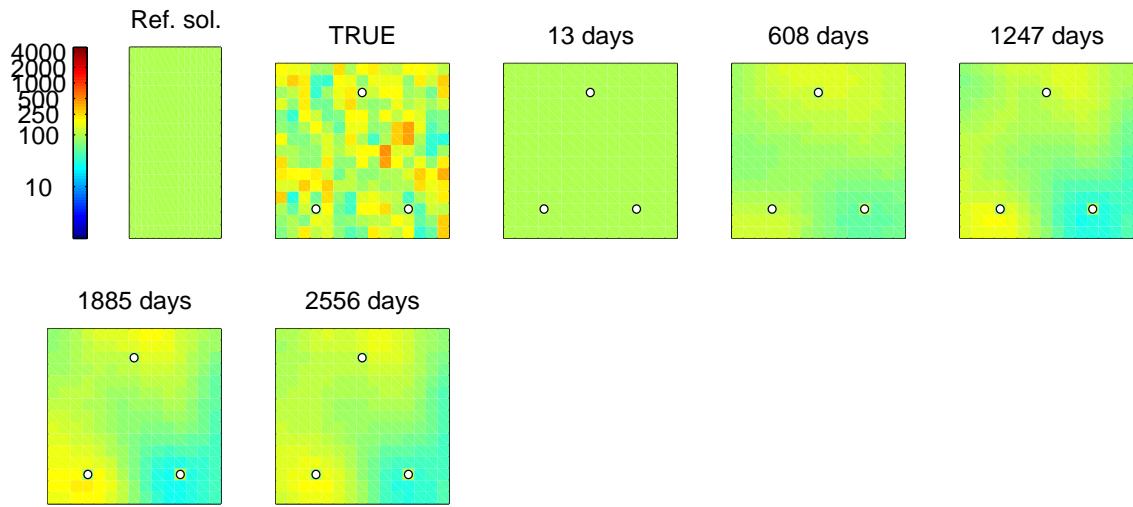


**Figure 59:** PERMX for ensemble member 1 for layer 4

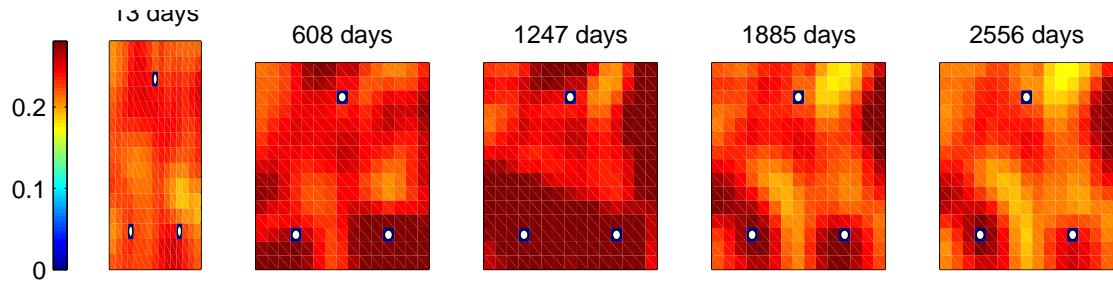


**Figure 60:** PERMX for ensemble member 2 for layer 4

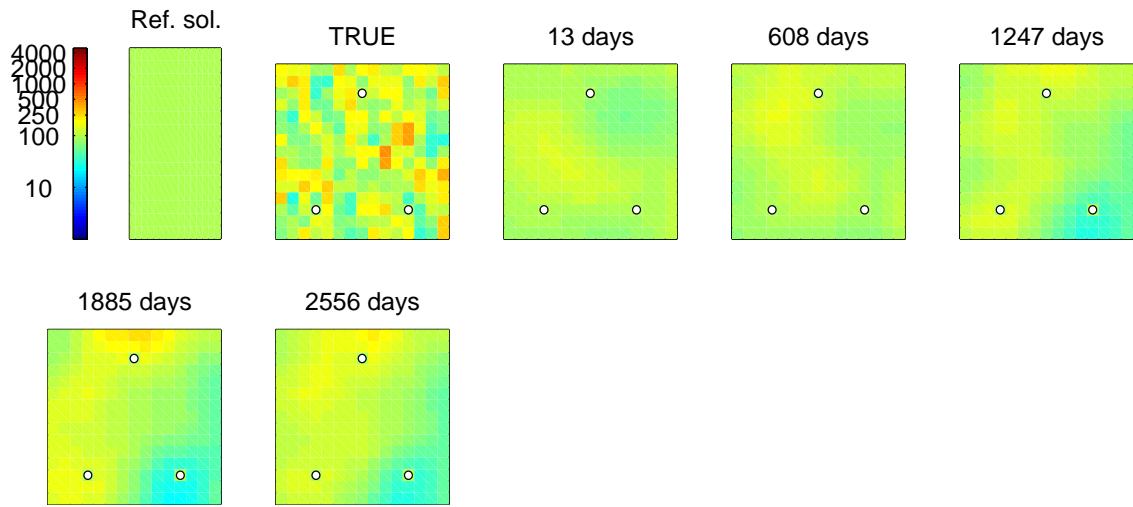
## 16 PERMX for layer 5



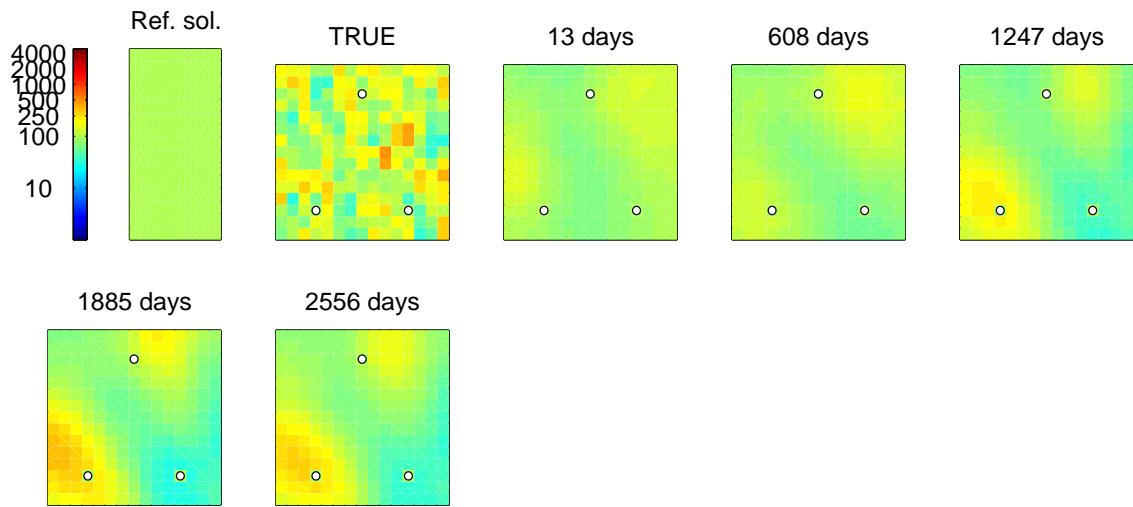
**Figure 61:** PERMX mean value for layer 5



**Figure 62:** PERMX standard deviation for layer 5

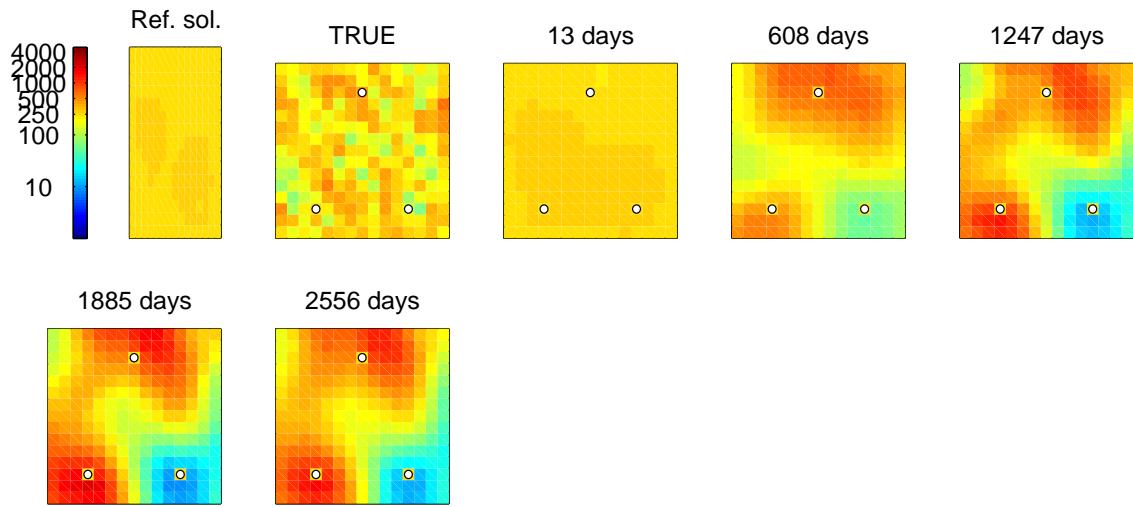


**Figure 63:** PERMX for ensemble member 1 for layer 5

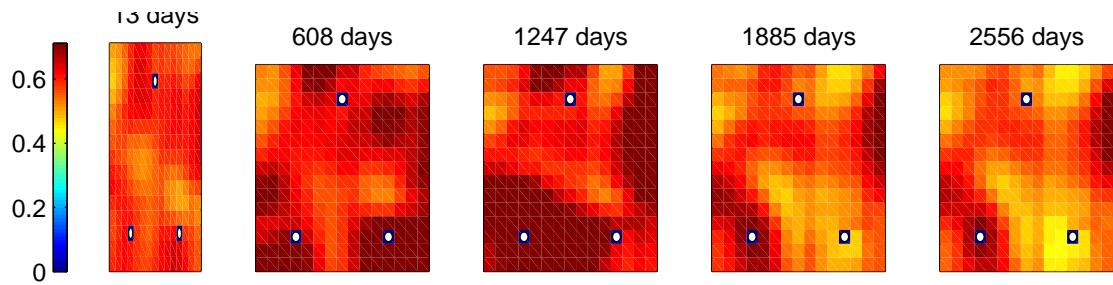


**Figure 64:** PERMX for ensemble member 2 for layer 5

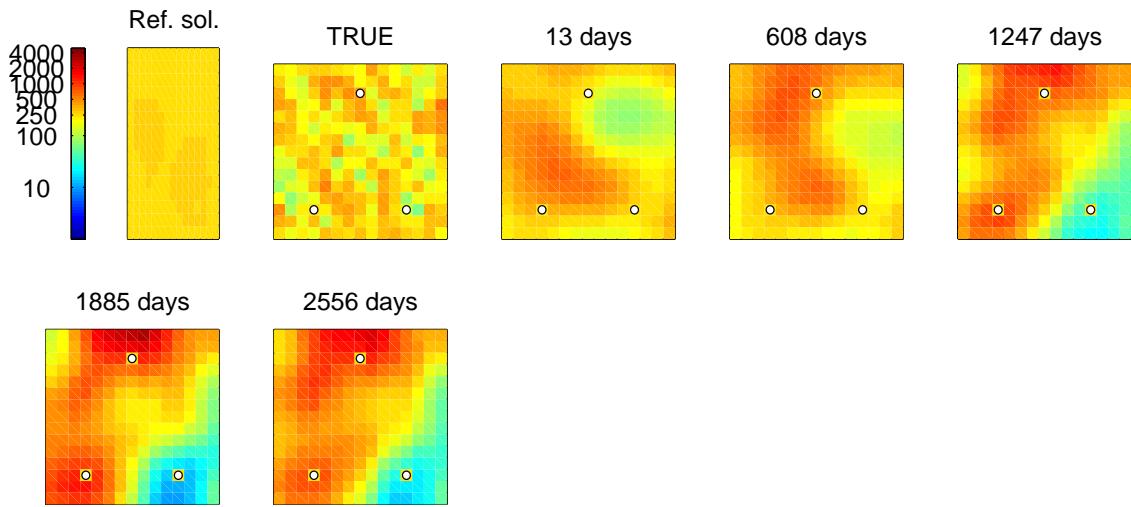
## 17 PERMX for layer 6



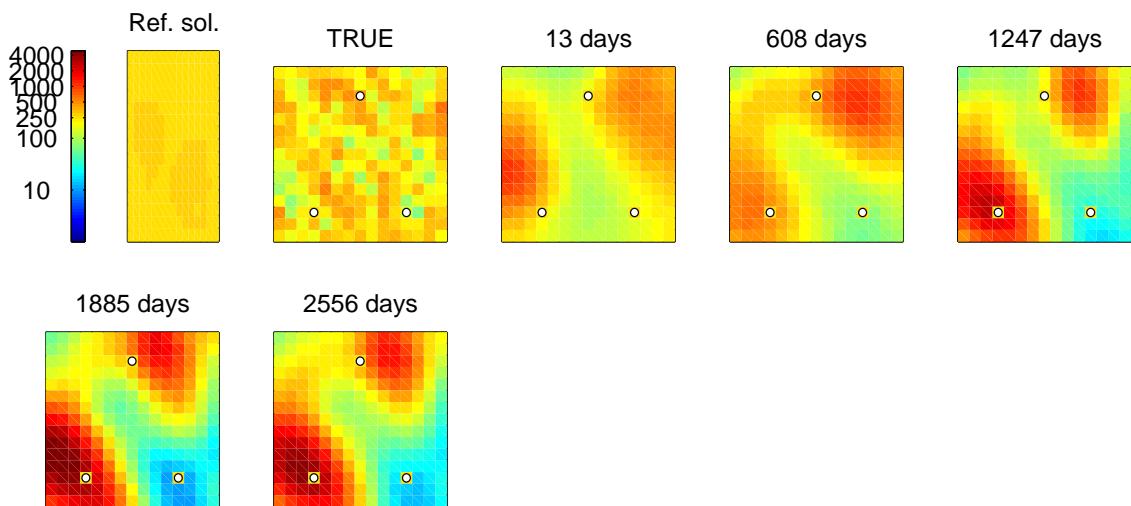
**Figure 65:** PERMX mean value for layer 6



**Figure 66:** PERMX standard deviation for layer 6

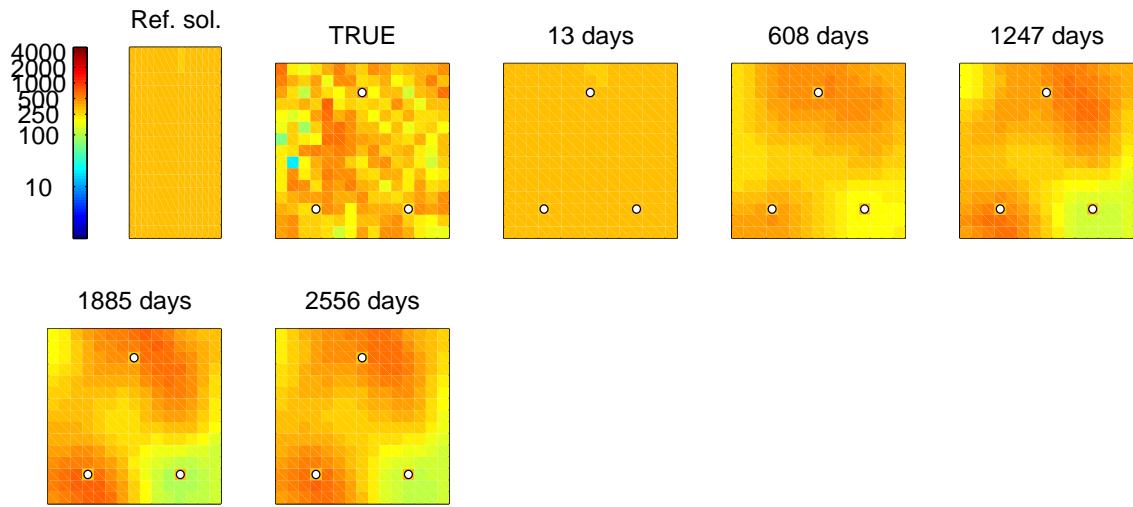


**Figure 67:** PERMX for ensemble member 1 for layer 6

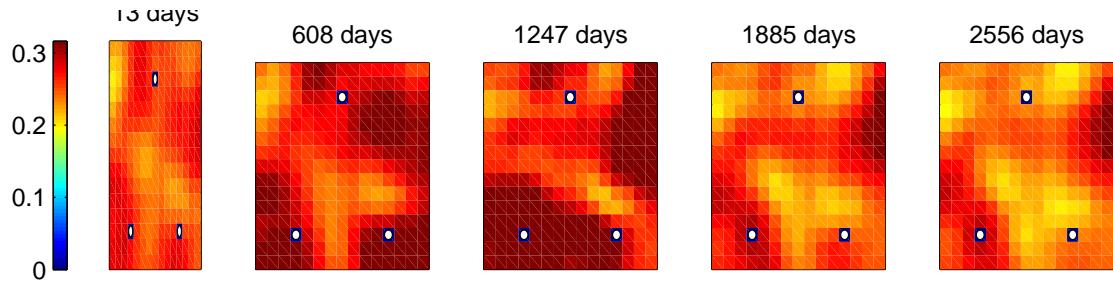


**Figure 68:** PERMX for ensemble member 2 for layer 6

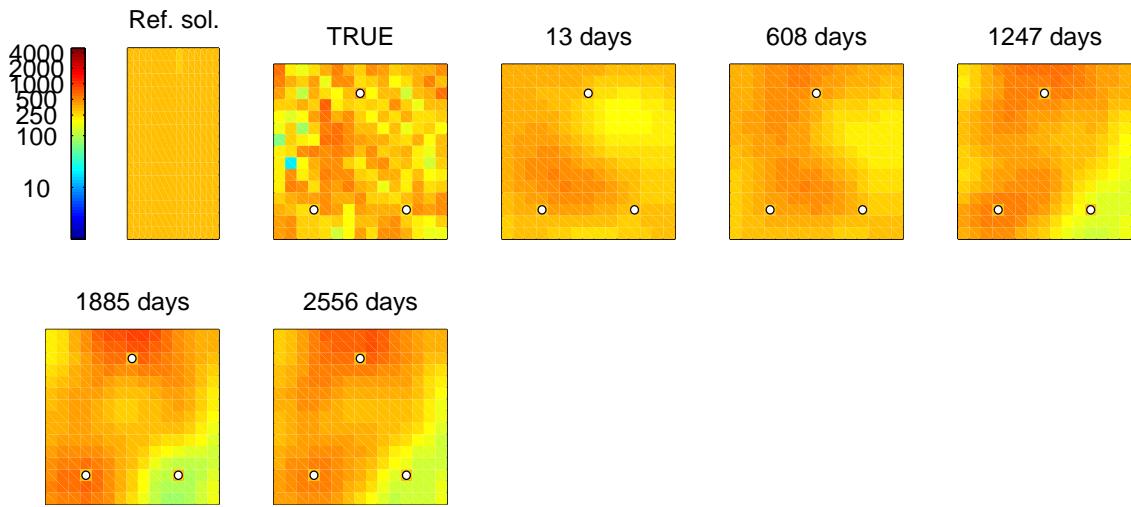
## 18 PERMX for layer 7



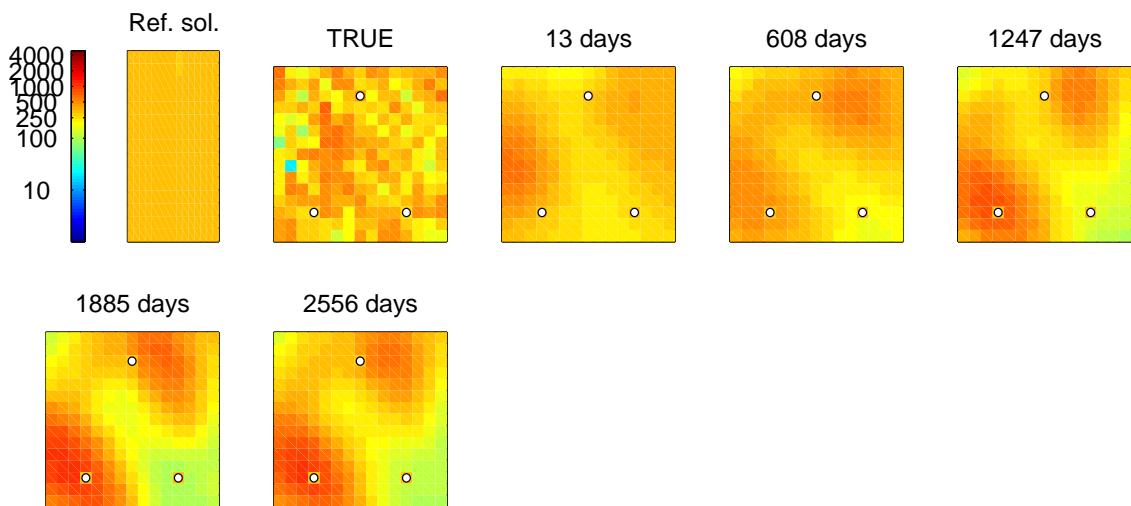
**Figure 69:** PERMX mean value for layer 7



**Figure 70:** PERMX standard deviation for layer 7

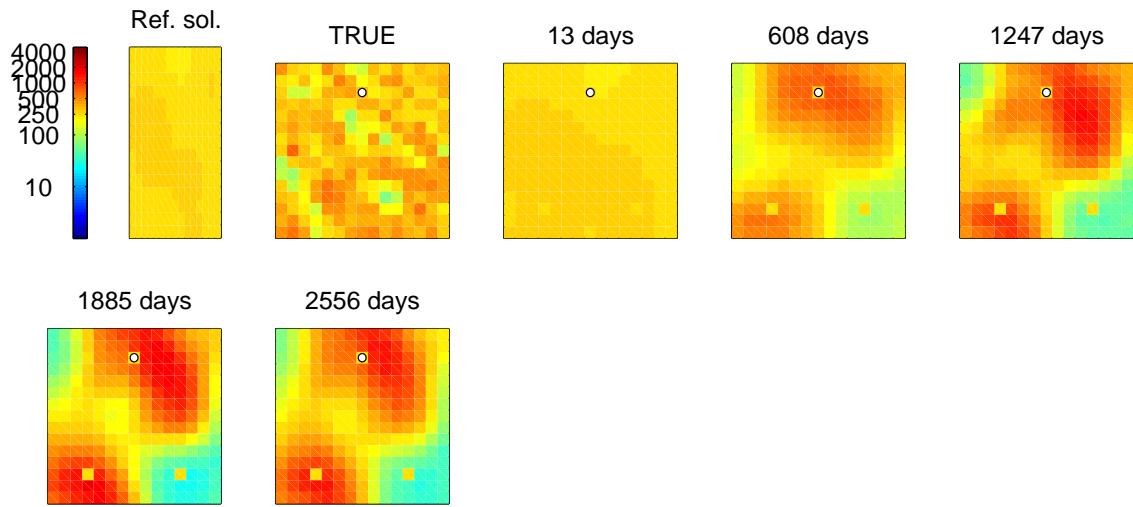


**Figure 71:** PERMX for ensemble member 1 for layer 7

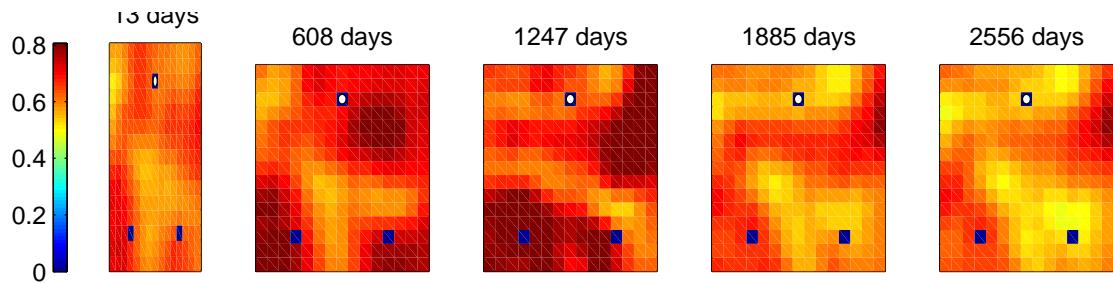


**Figure 72:** PERMX for ensemble member 2 for layer 7

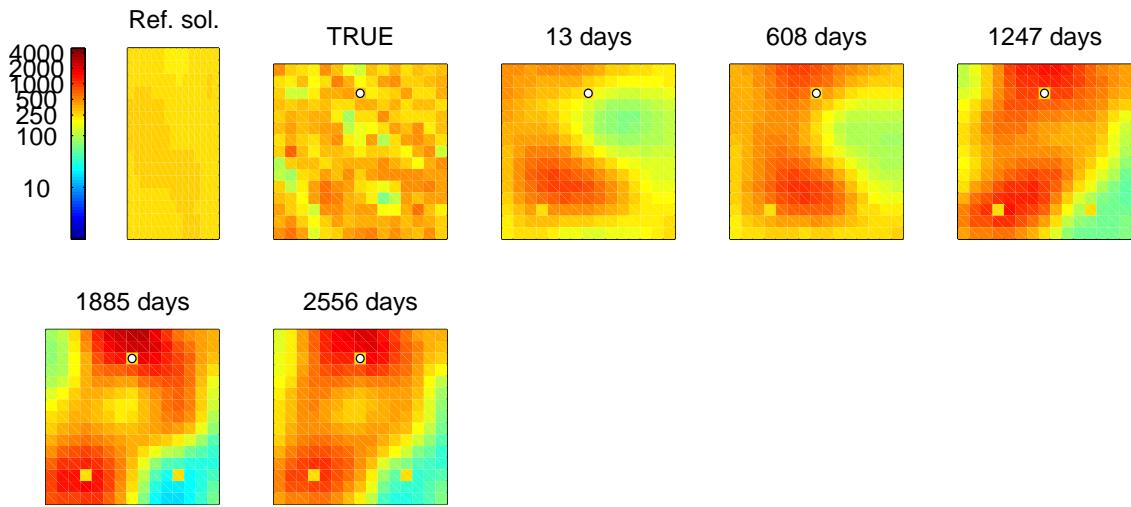
## 19 PERMX for layer 8



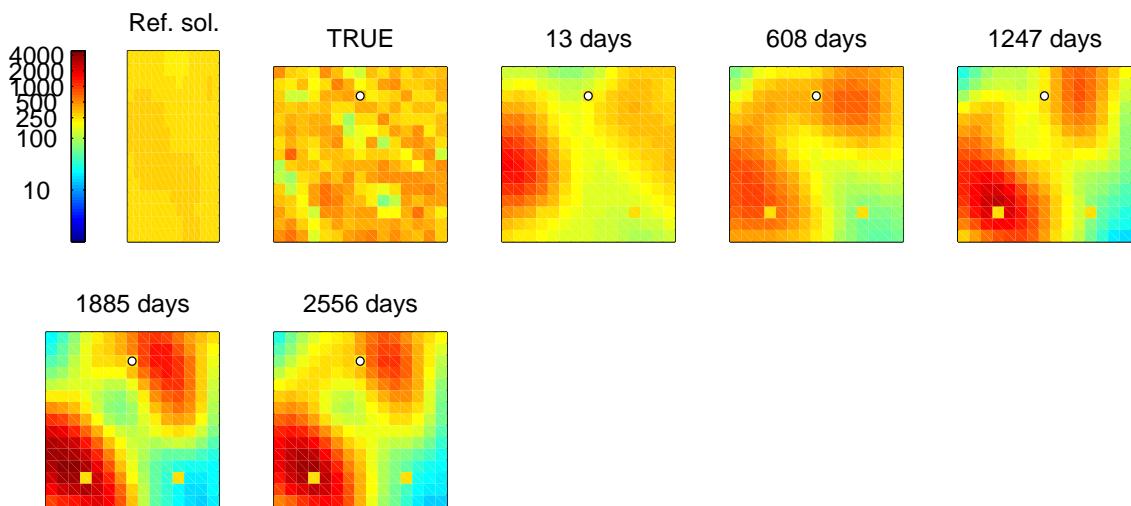
**Figure 73:** PERMX mean value for layer 8



**Figure 74:** PERMX standard deviation for layer 8

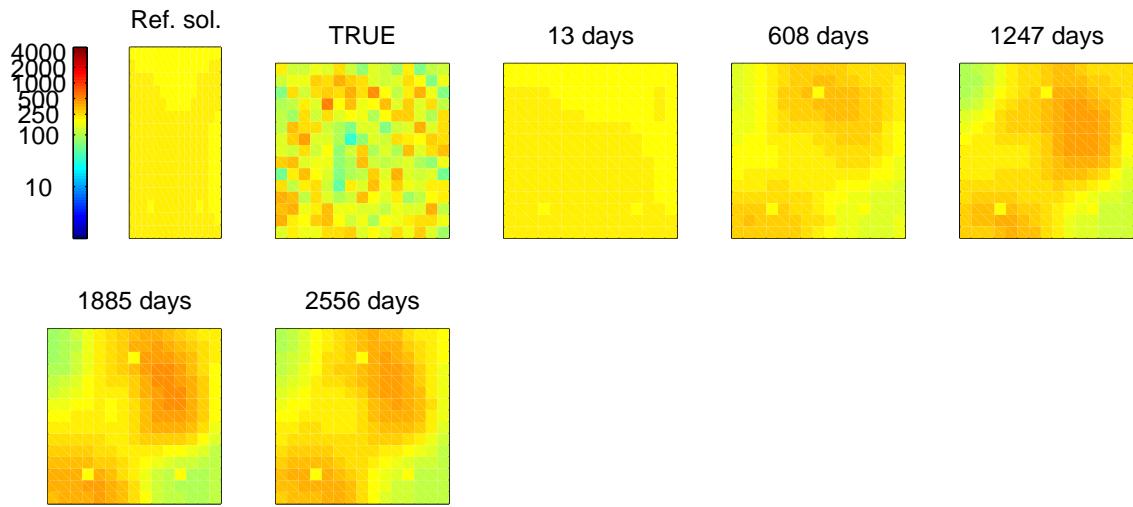


**Figure 75:** PERMX for ensemble member 1 for layer 8

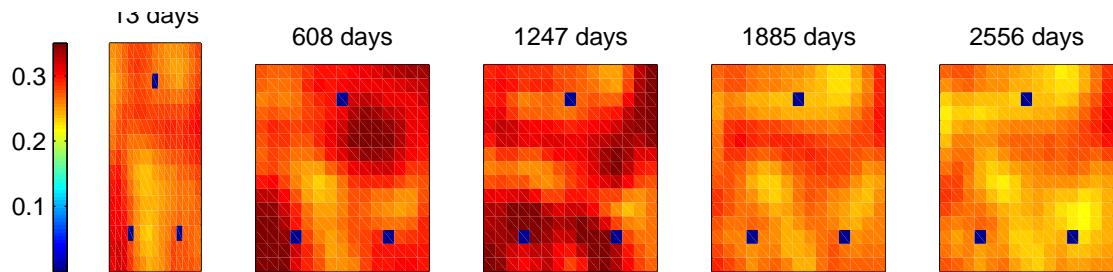


**Figure 76:** PERMX for ensemble member 2 for layer 8

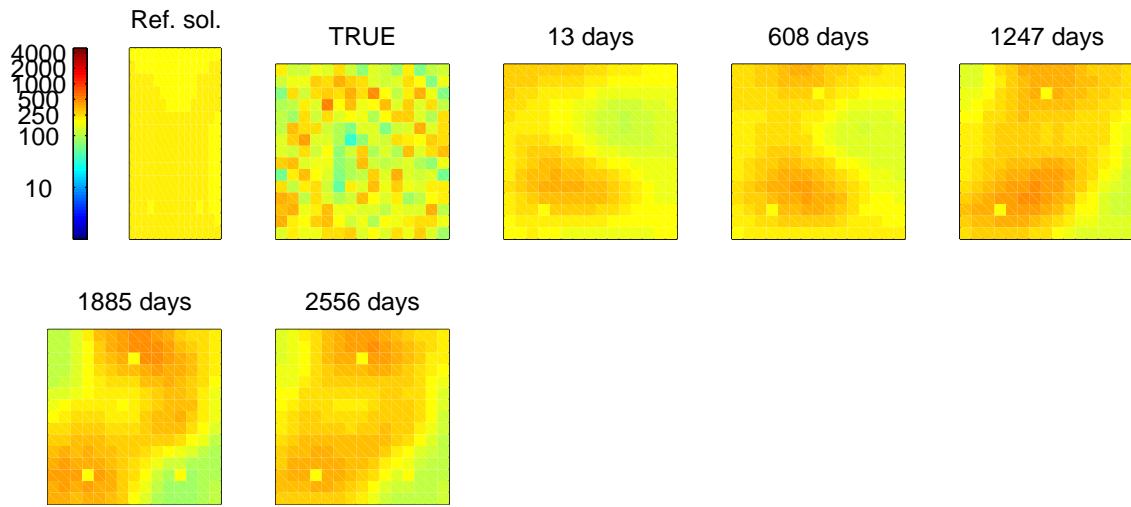
## 20 PERMX for layer 9



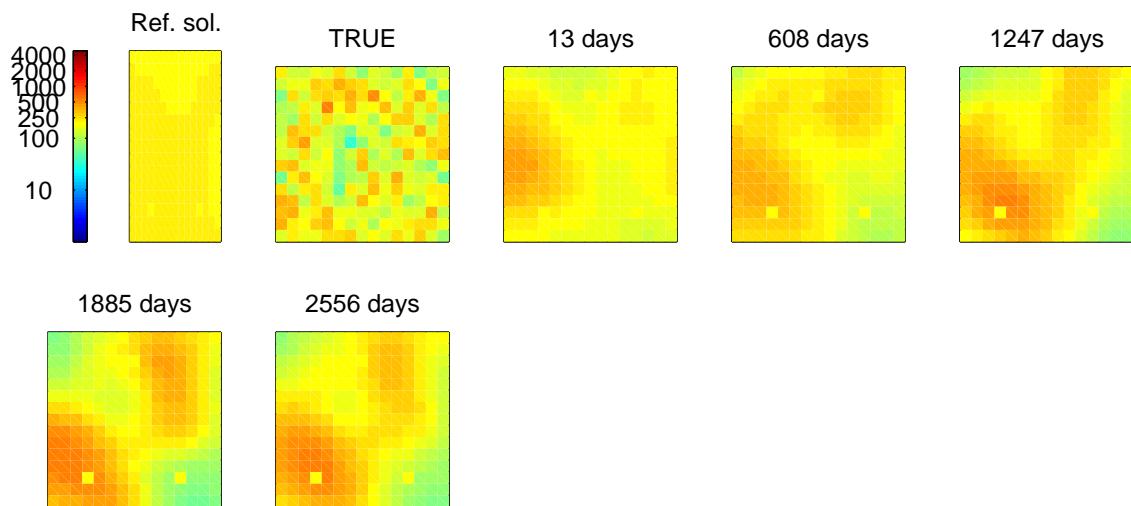
**Figure 77:** PERMX mean value for layer 9



**Figure 78:** PERMX standard deviation for layer 9

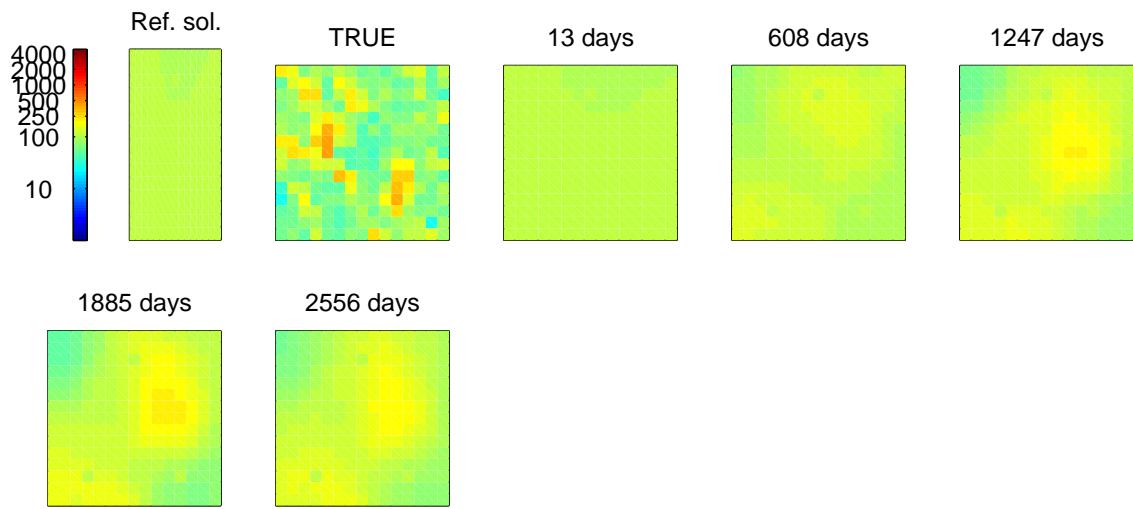


**Figure 79:** PERMX for ensemble member 1 for layer 9

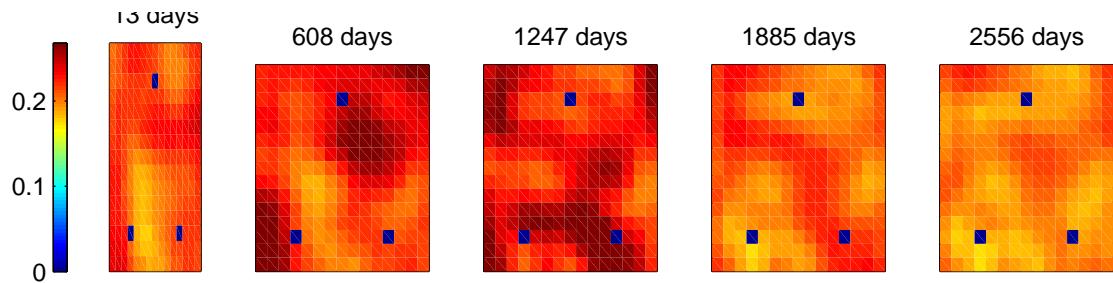


**Figure 80:** PERMX for ensemble member 2 for layer 9

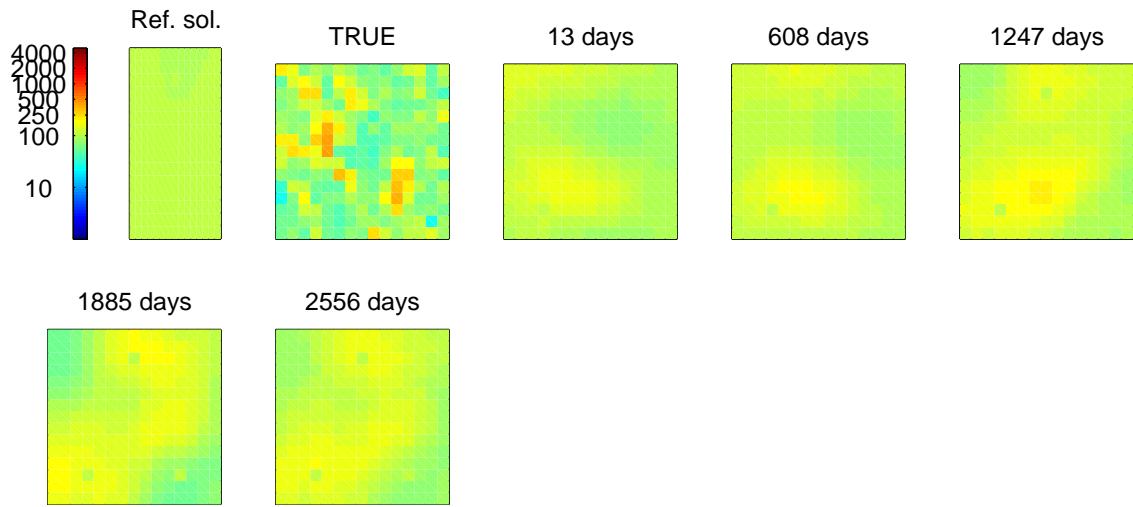
## 21 PERMX for layer 10



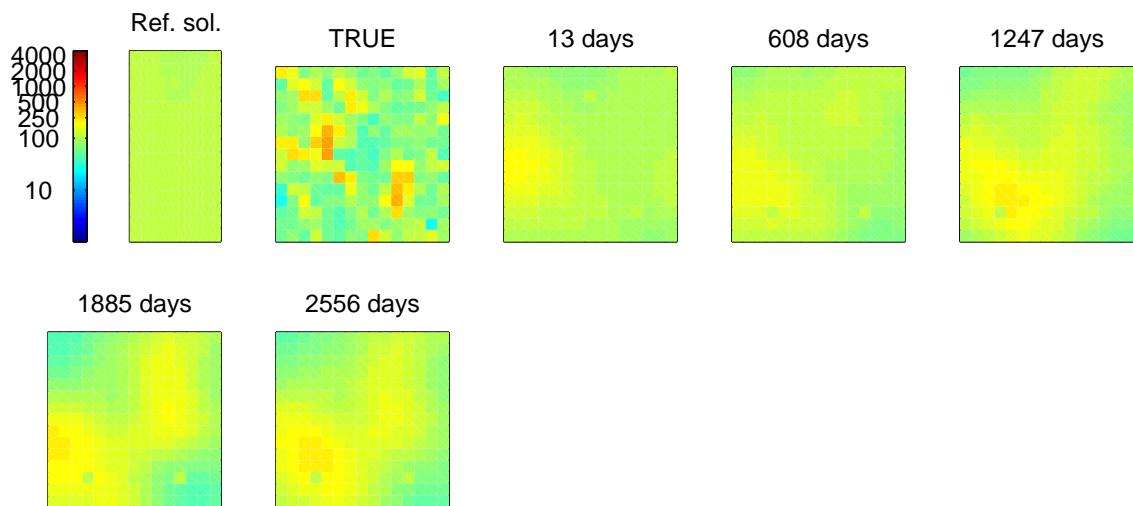
**Figure 81:** PERMX mean value for layer 10



**Figure 82:** PERMX standard deviation for layer 10

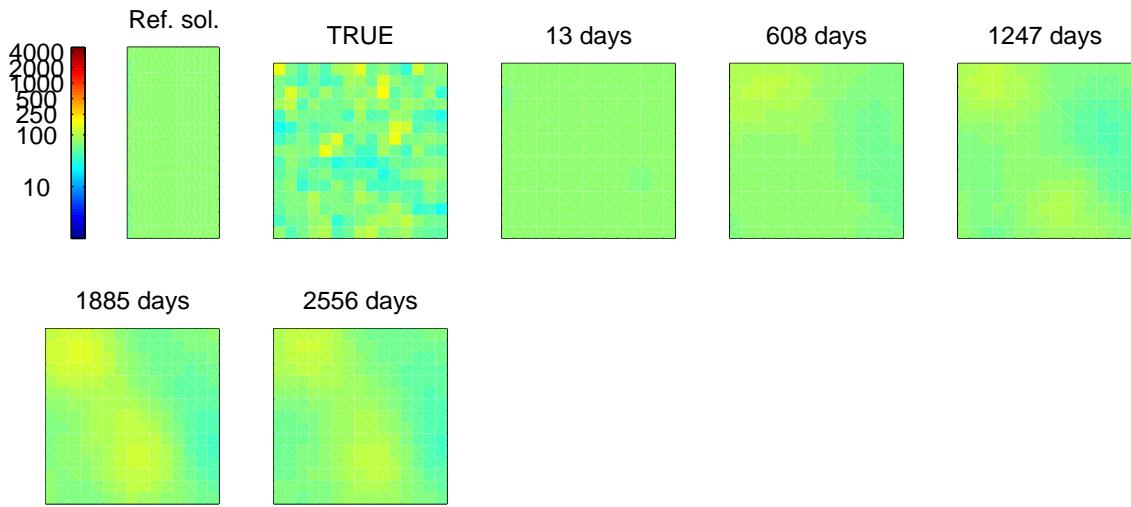


**Figure 83:** PERMX for ensemble member 1 for layer 10

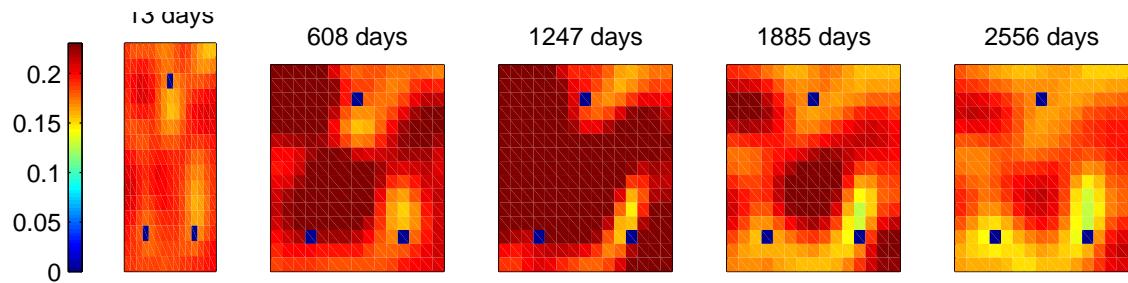


**Figure 84:** PERMX for ensemble member 2 for layer 10

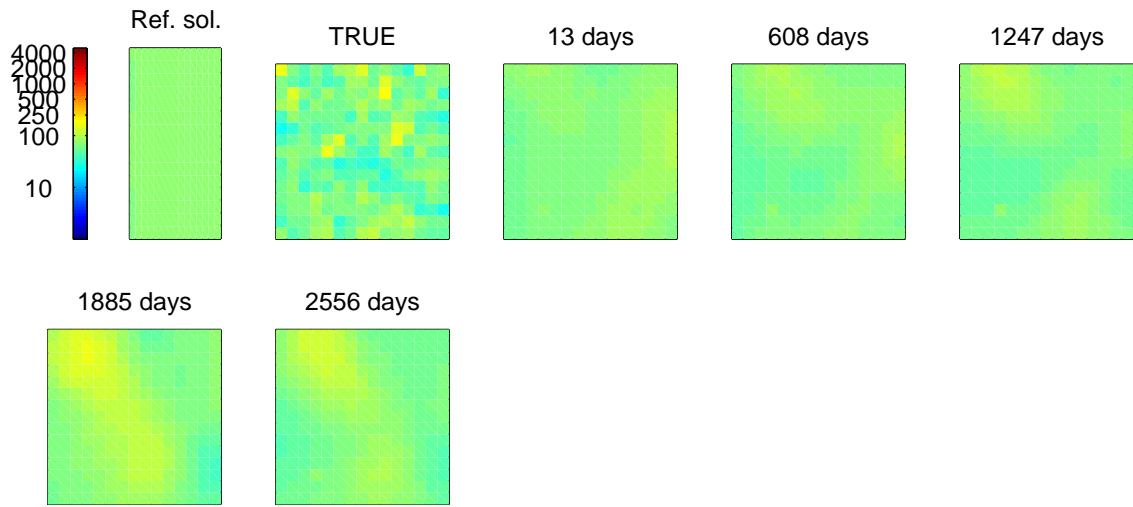
## 22 PERMY for layer 1



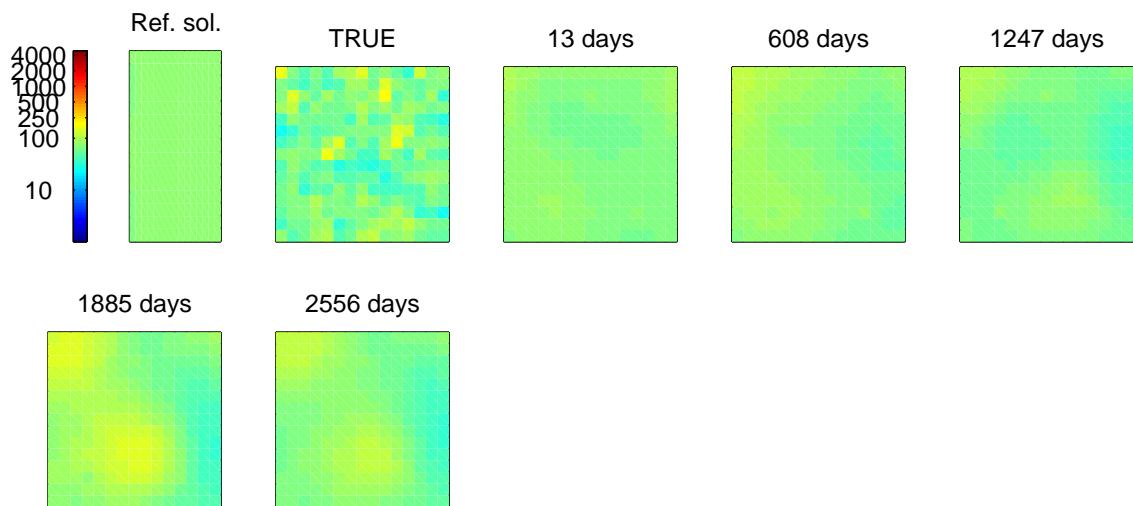
**Figure 85:** PERMY mean value for layer 1



**Figure 86:** PERMY standard deviation for layer 1

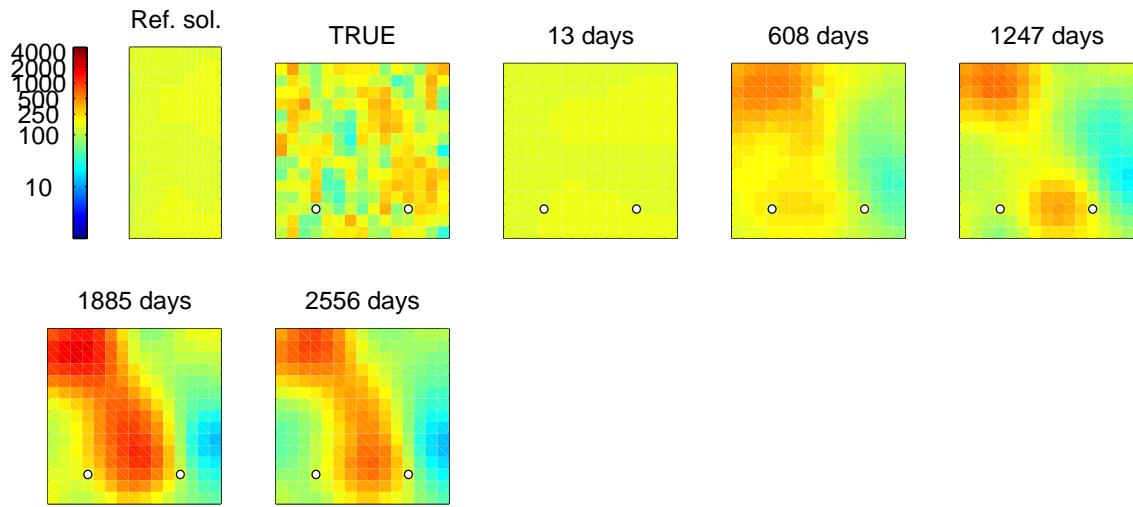


**Figure 87:** PERMY for ensemble member 1 for layer 1

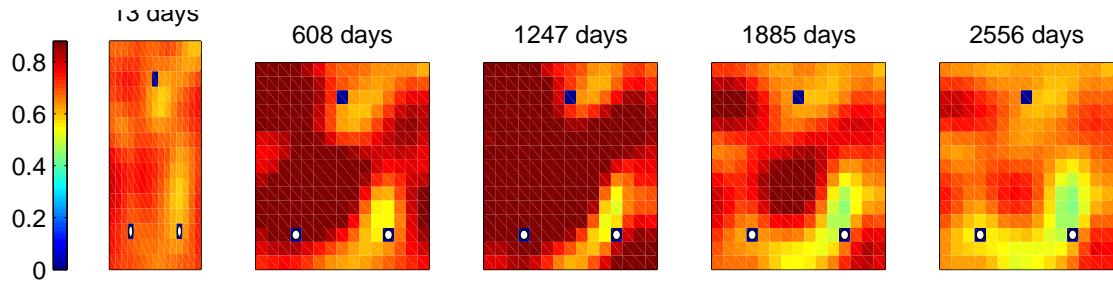


**Figure 88:** PERMY for ensemble member 2 for layer 1

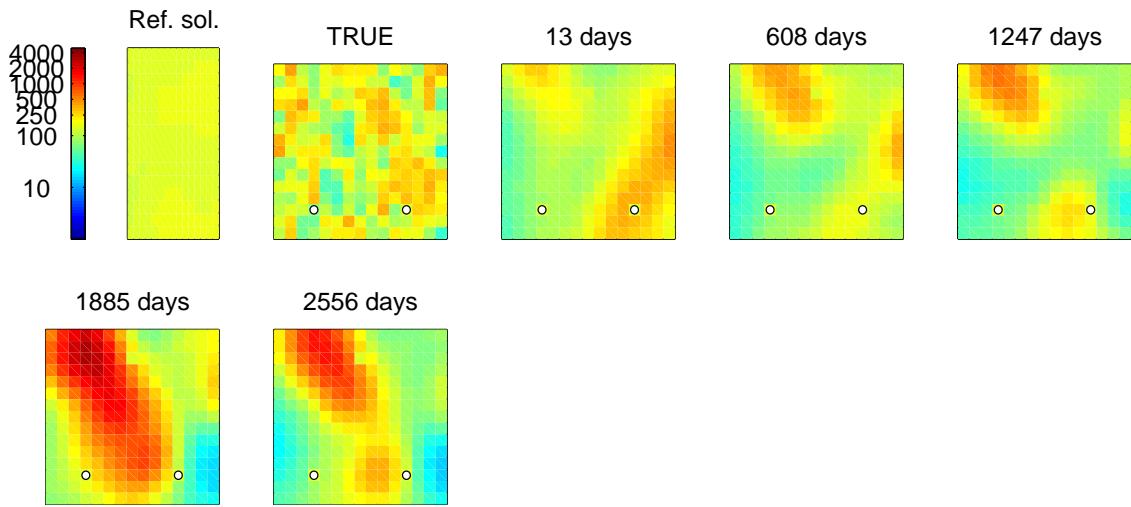
## 23 PERMY for layer 2



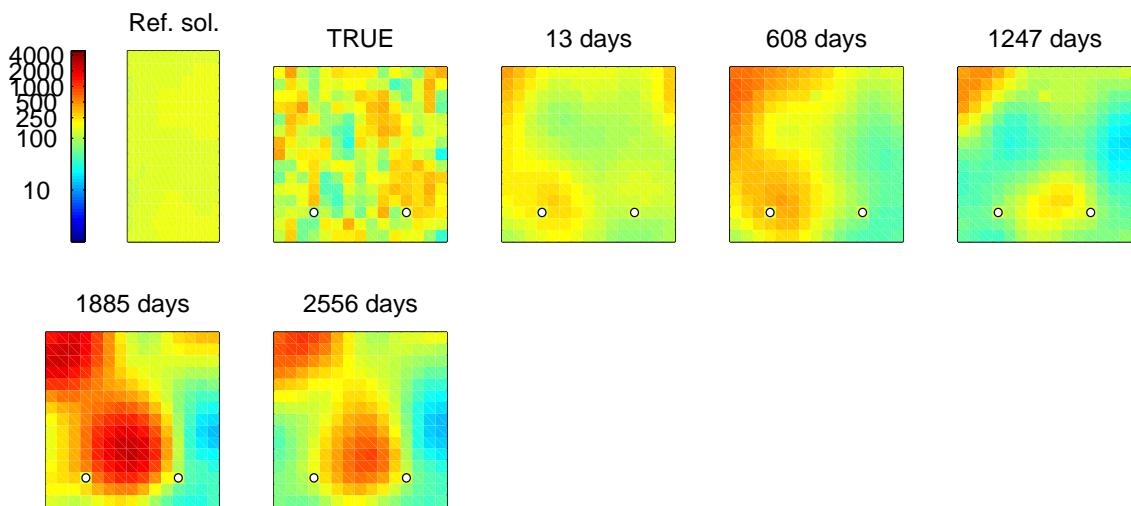
**Figure 89:** PERMY mean value for layer 2



**Figure 90:** PERMY standard deviation for layer 2

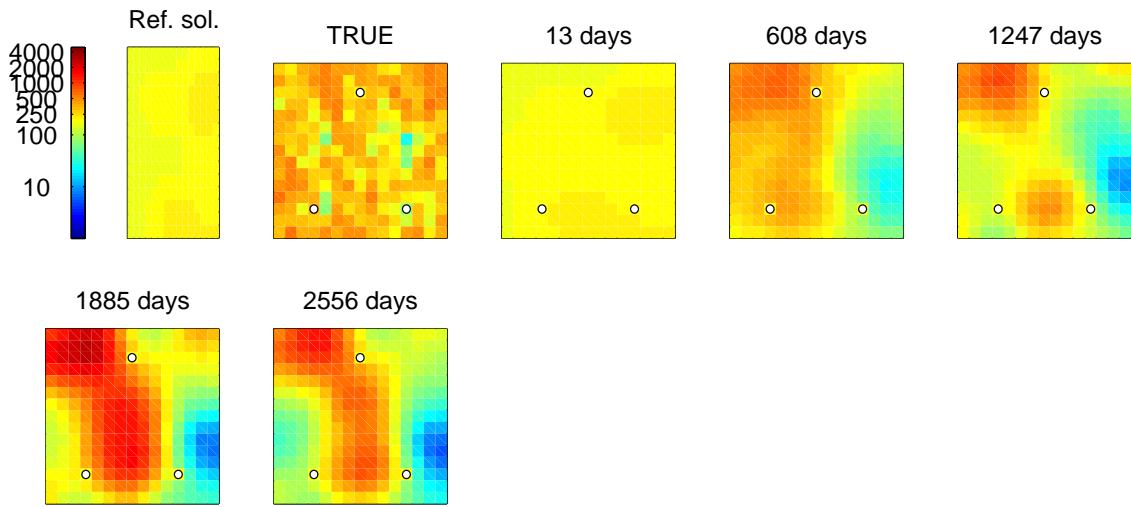


**Figure 91:** PERMY for ensemble member 1 for layer 2

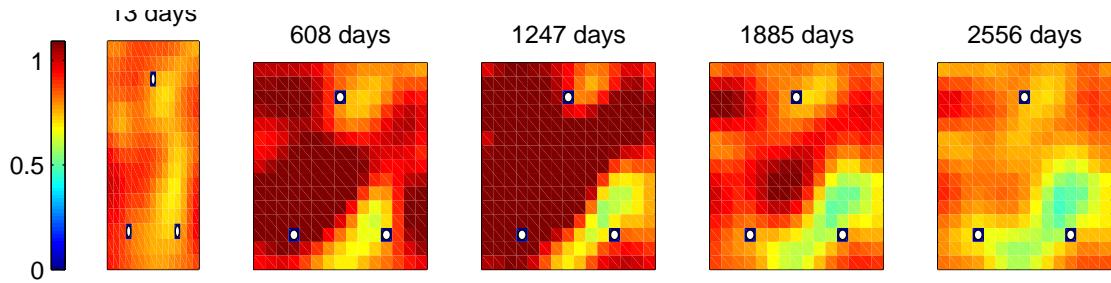


**Figure 92:** PERMY for ensemble member 2 for layer 2

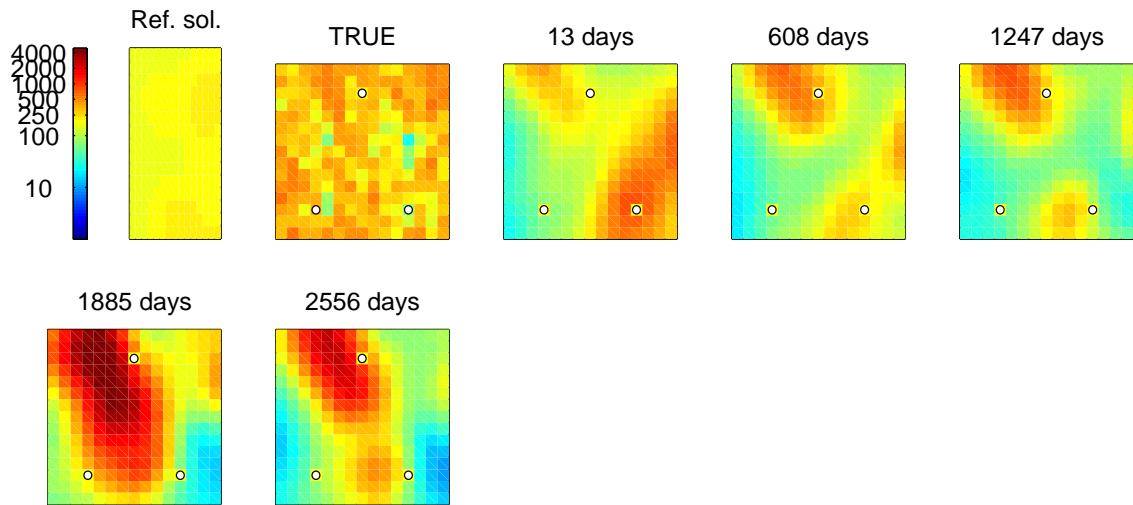
## 24 PERMY for layer 3



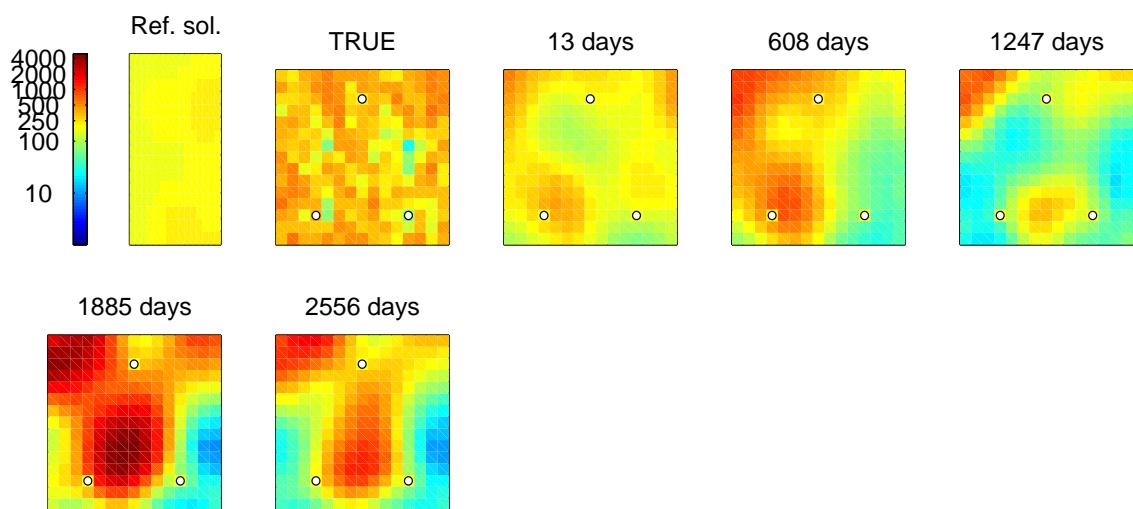
**Figure 93:** PERMY mean value for layer 3



**Figure 94:** PERMY standard deviation for layer 3

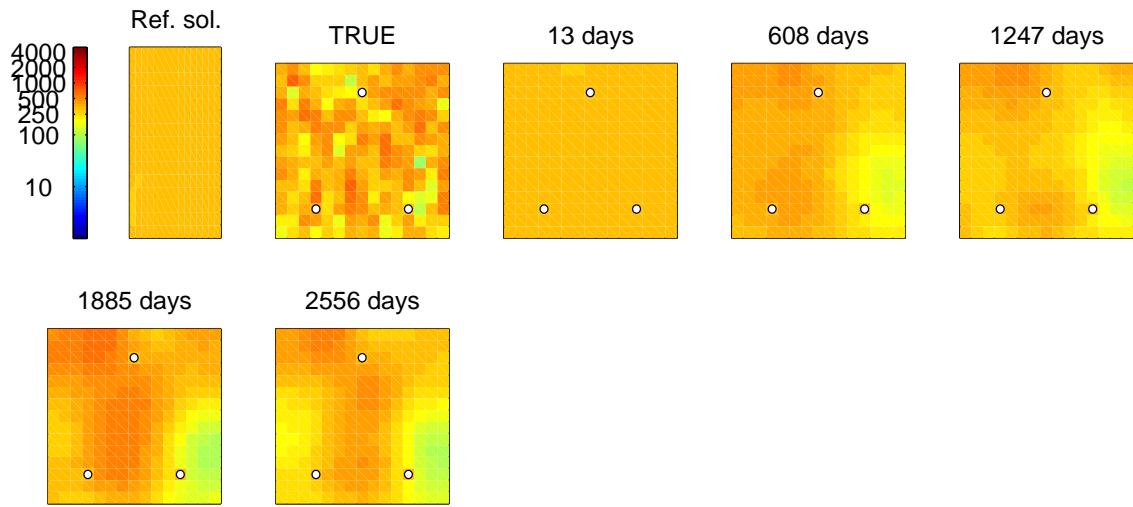


**Figure 95:** PERMY for ensemble member 1 for layer 3

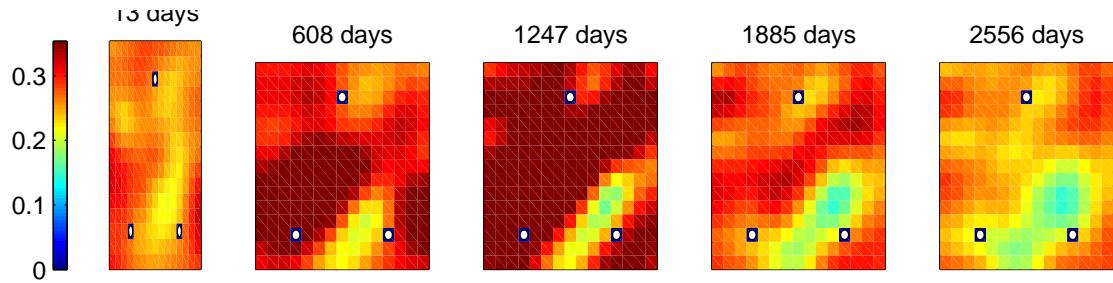


**Figure 96:** PERMY for ensemble member 2 for layer 3

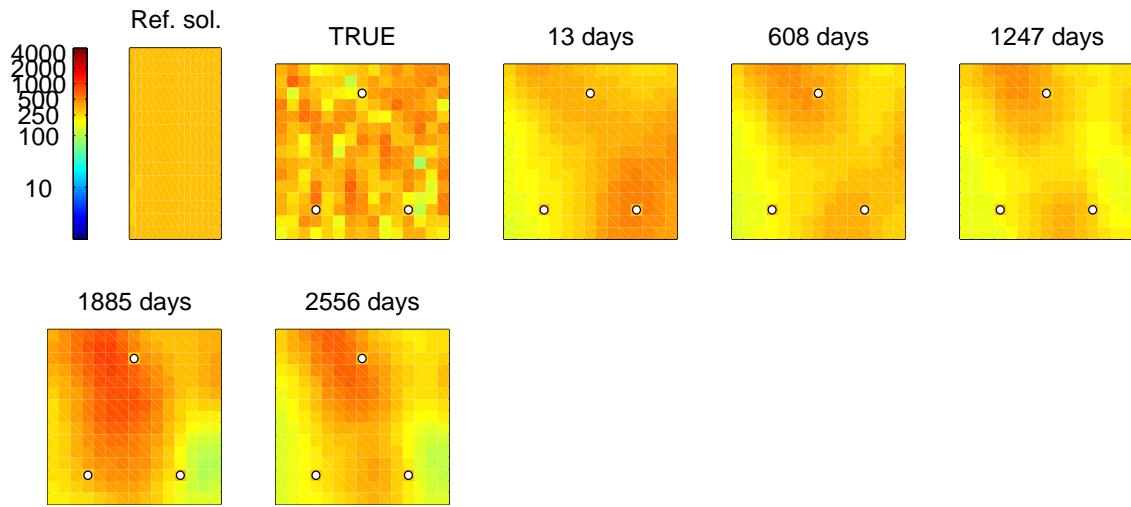
## 25 PERMY for layer 4



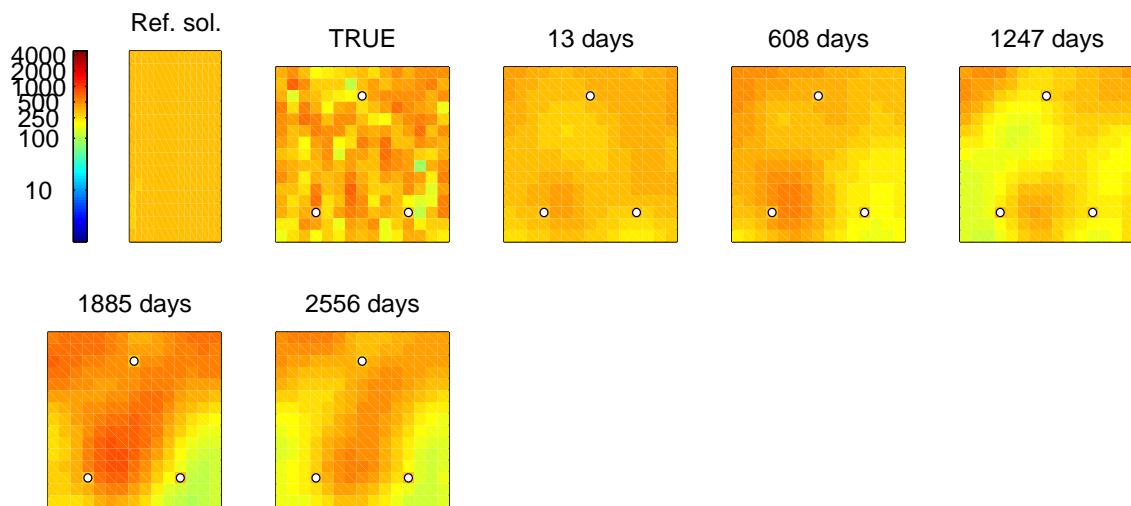
**Figure 97:** PERMY mean value for layer 4



**Figure 98:** PERMY standard deviation for layer 4

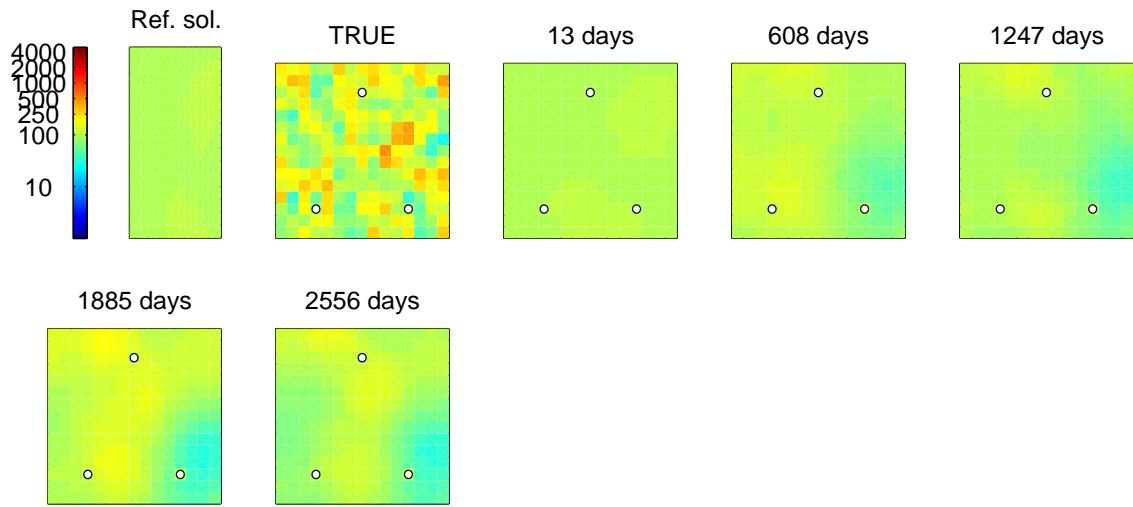


**Figure 99:** PERMY for ensemble member 1 for layer 4

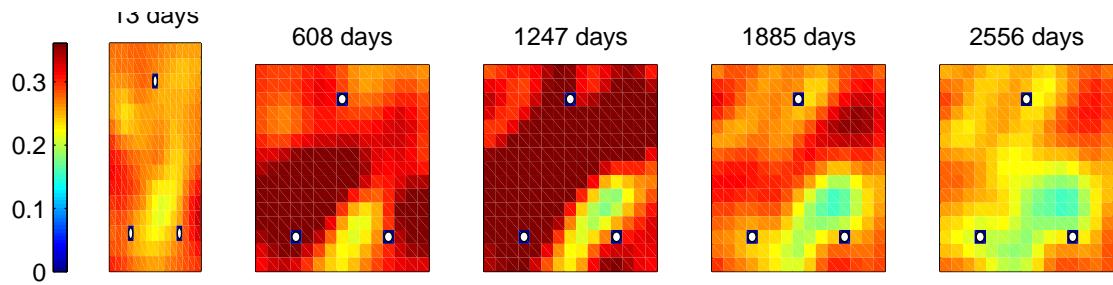


**Figure 100:** PERMY for ensemble member 2 for layer 4

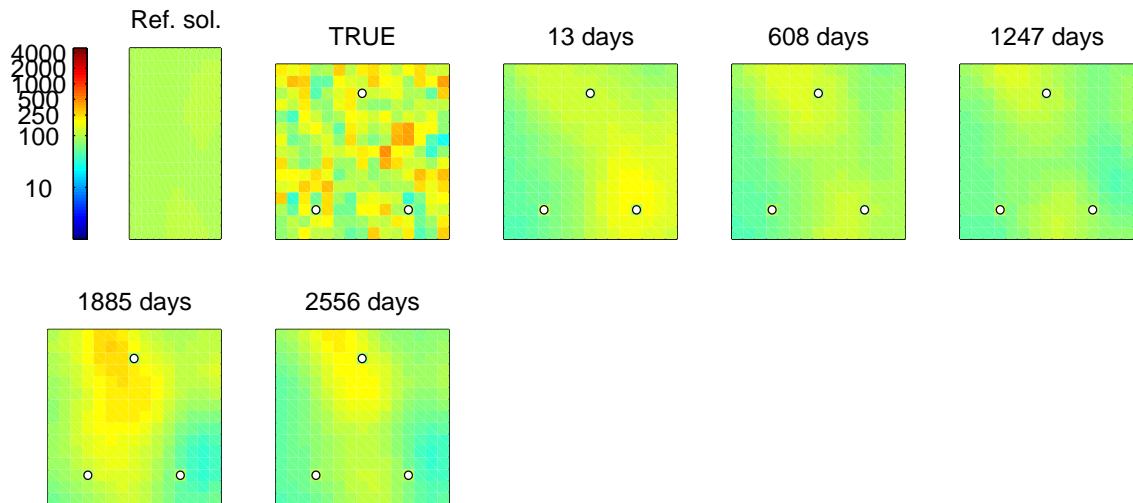
## 26 PERMY for layer 5



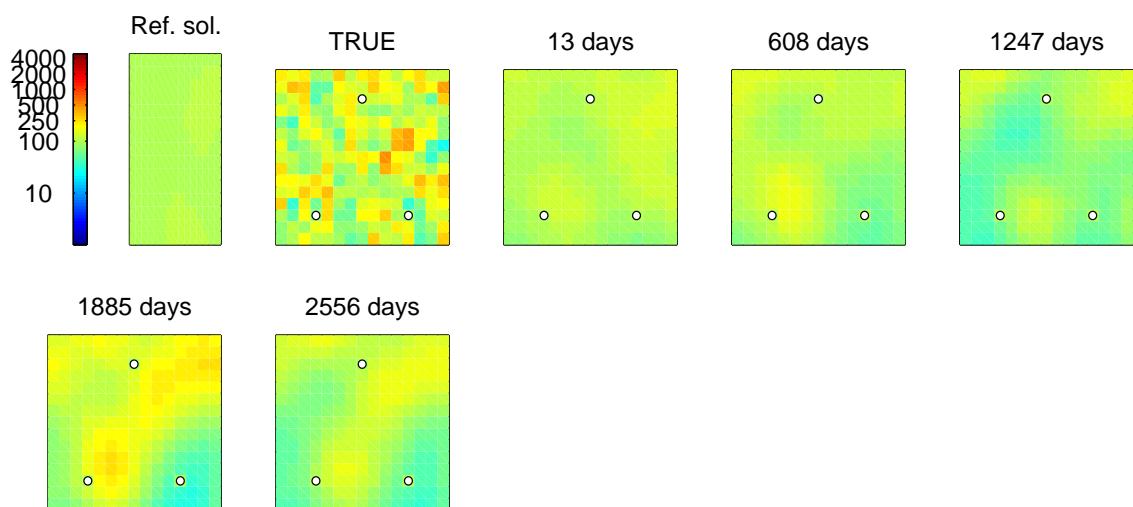
**Figure 101:** PERMY mean value for layer 5



**Figure 102:** PERMY standard deviation for layer 5

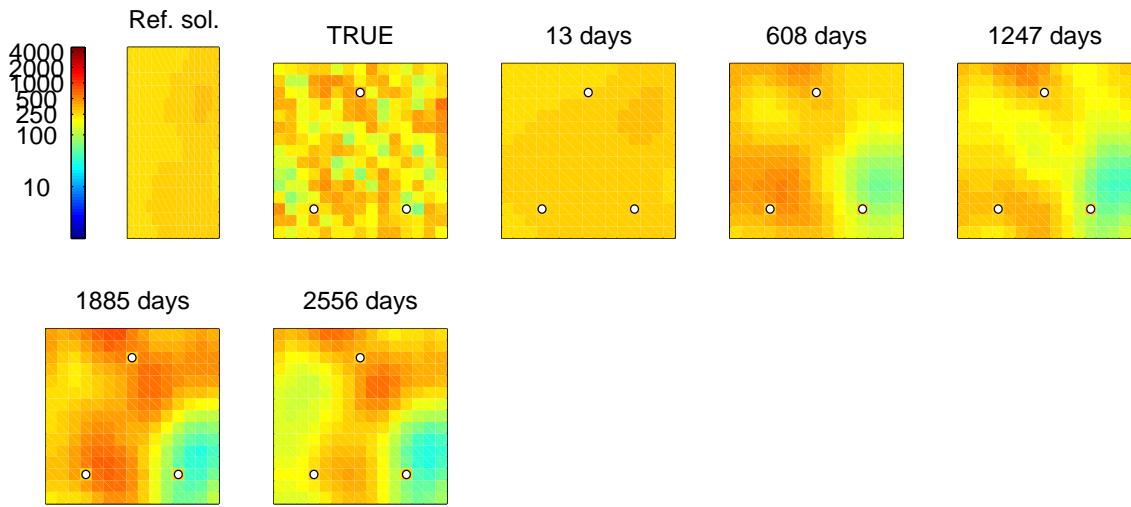


**Figure 103:** PERMY for ensemble member 1 for layer 5

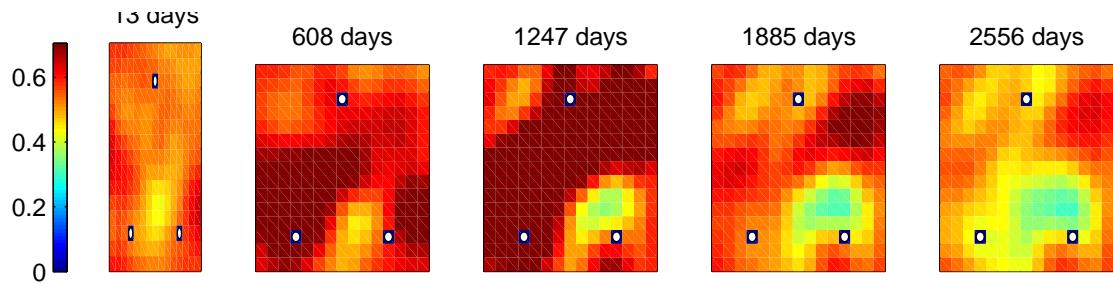


**Figure 104:** PERMY for ensemble member 2 for layer 5

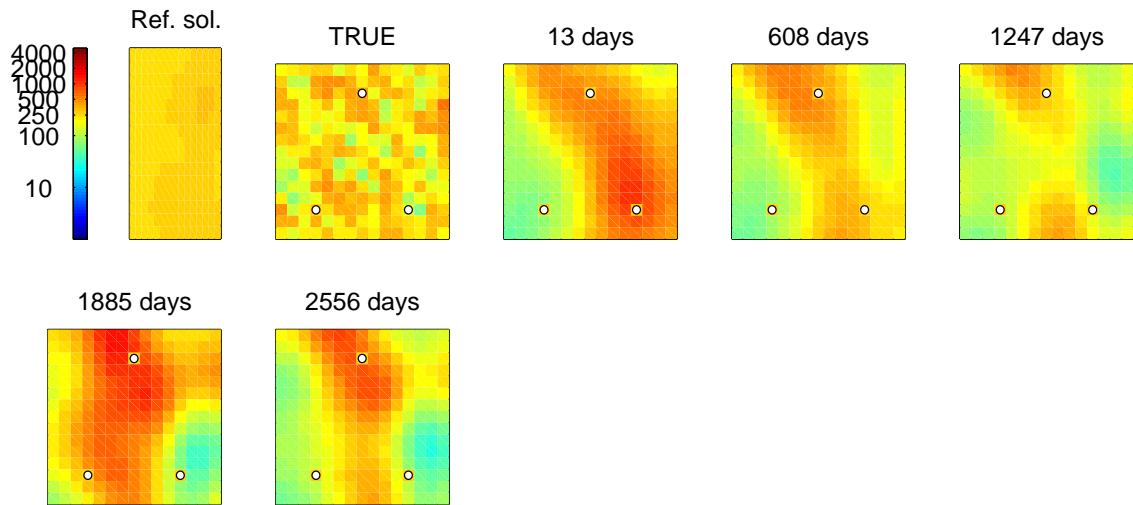
## 27 PERMY for layer 6



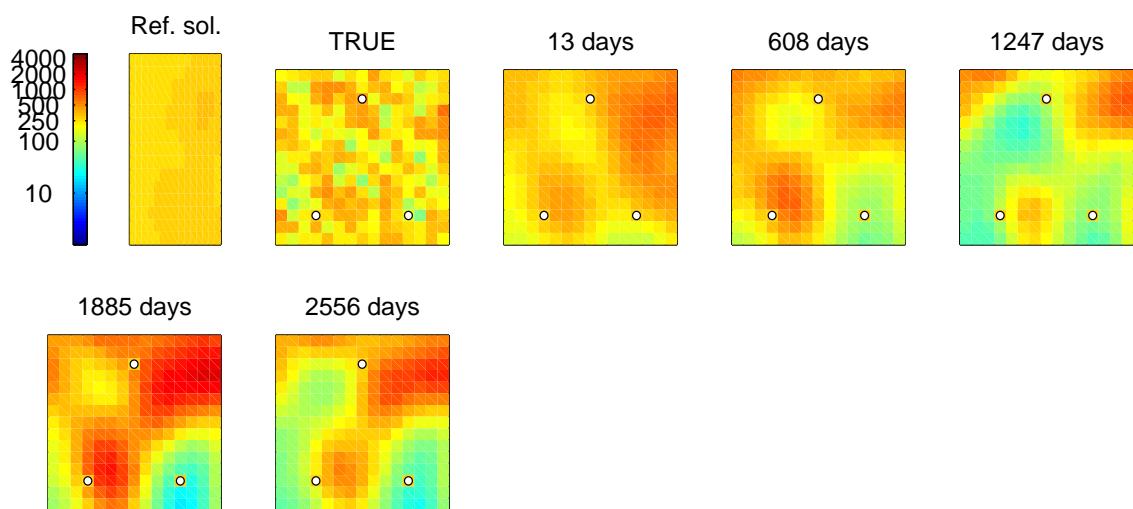
**Figure 105:** PERMY mean value for layer 6



**Figure 106:** PERMY standard deviation for layer 6

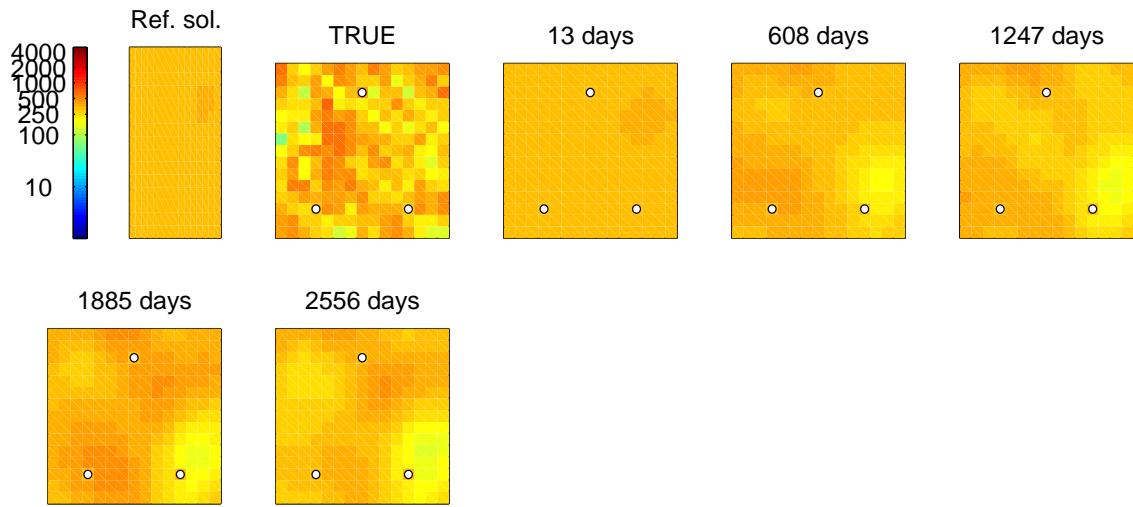


**Figure 107:** PERMY for ensemble member 1 for layer 6

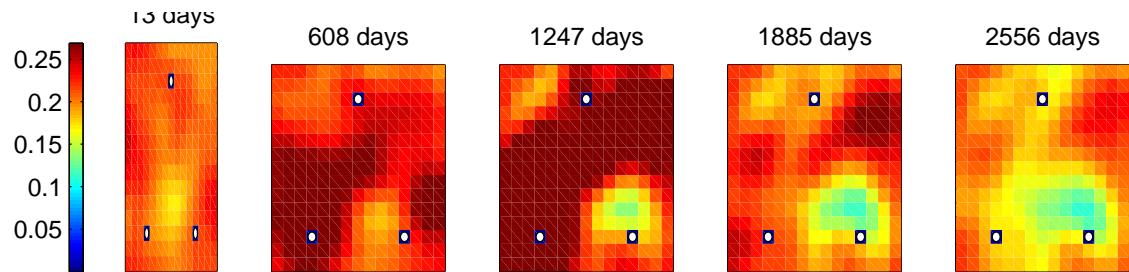


**Figure 108:** PERMY for ensemble member 2 for layer 6

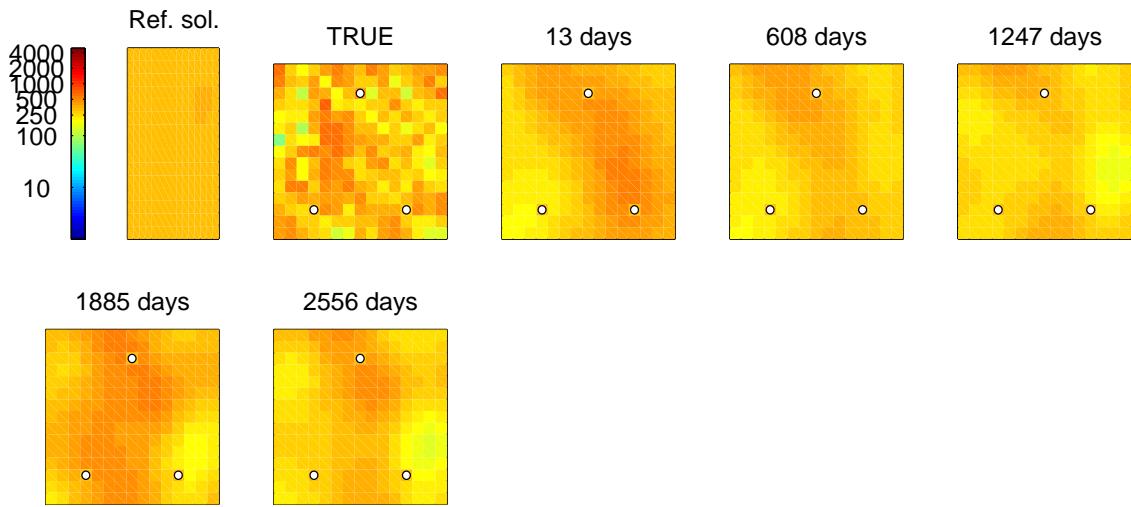
## 28 PERMY for layer 7



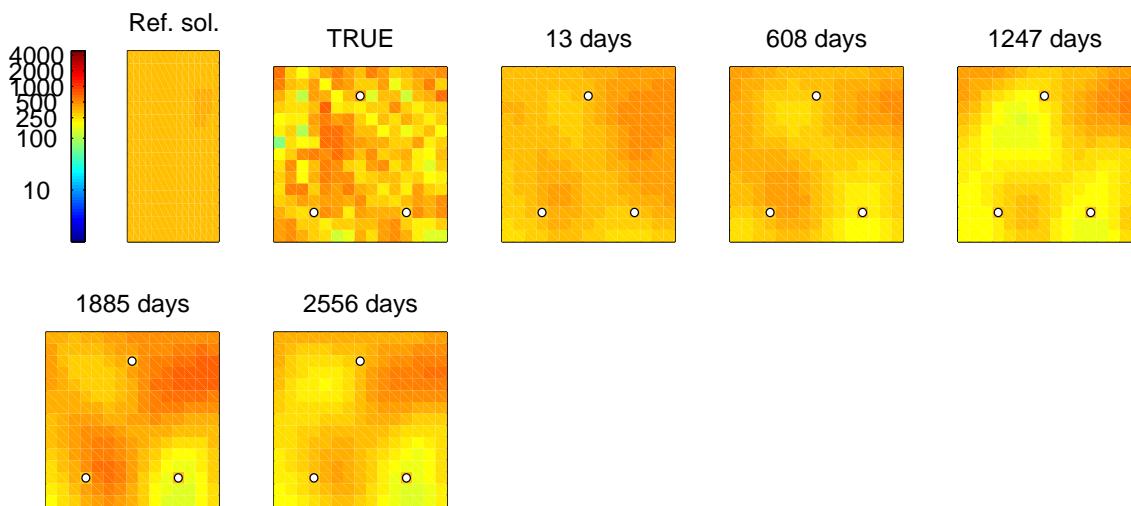
**Figure 109:** PERMY mean value for layer 7



**Figure 110:** PERMY standard deviation for layer 7

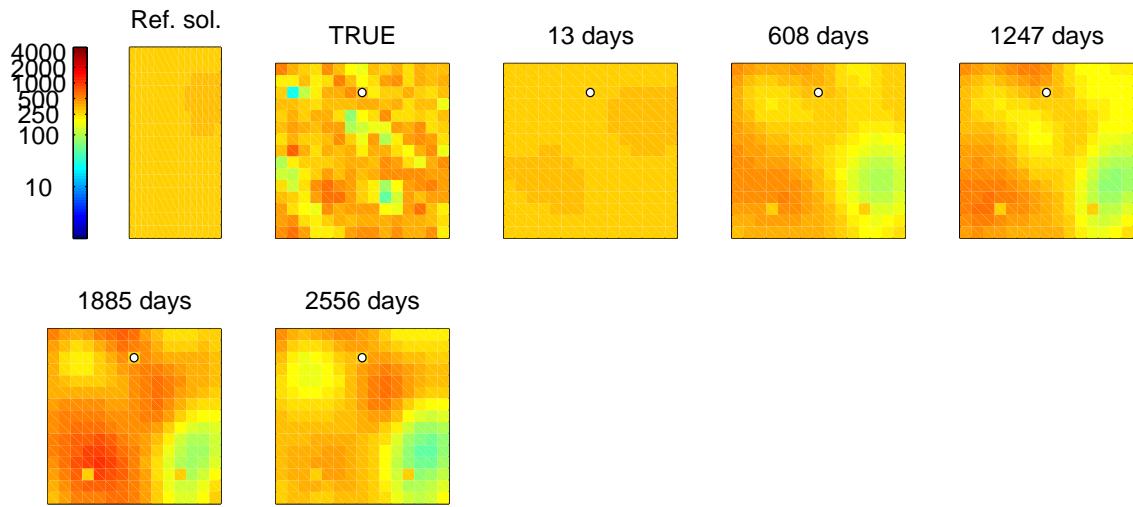


**Figure 111:** PERMY for ensemble member 1 for layer 7

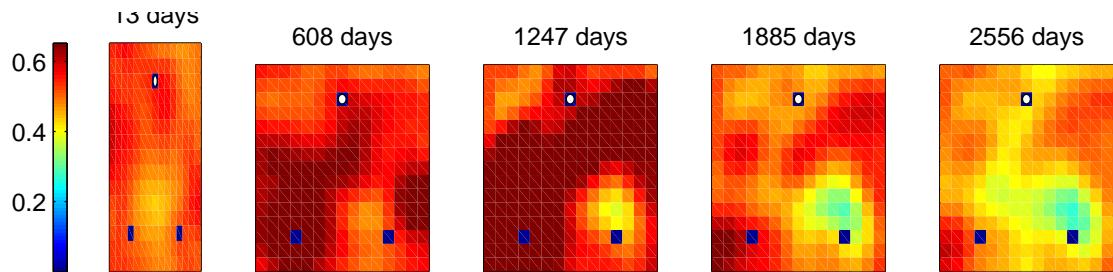


**Figure 112:** PERMY for ensemble member 2 for layer 7

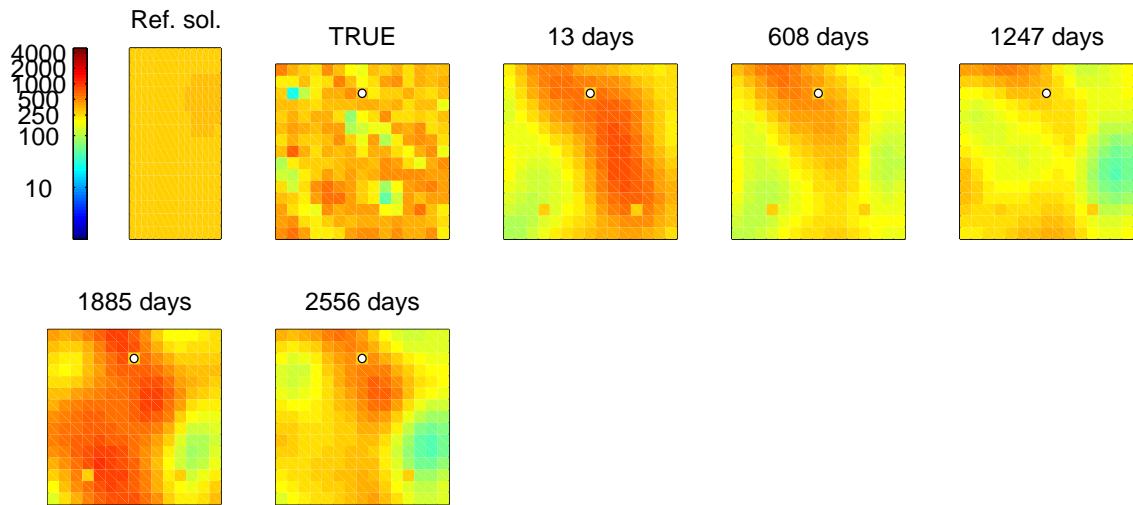
## 29 PERMY for layer 8



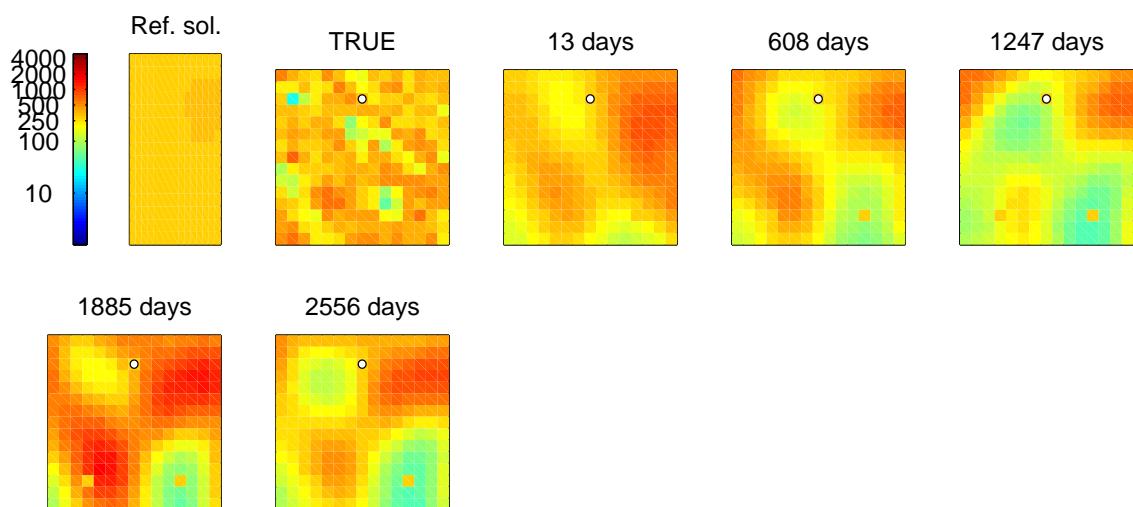
**Figure 113:** PERMY mean value for layer 8



**Figure 114:** PERMY standard deviation for layer 8

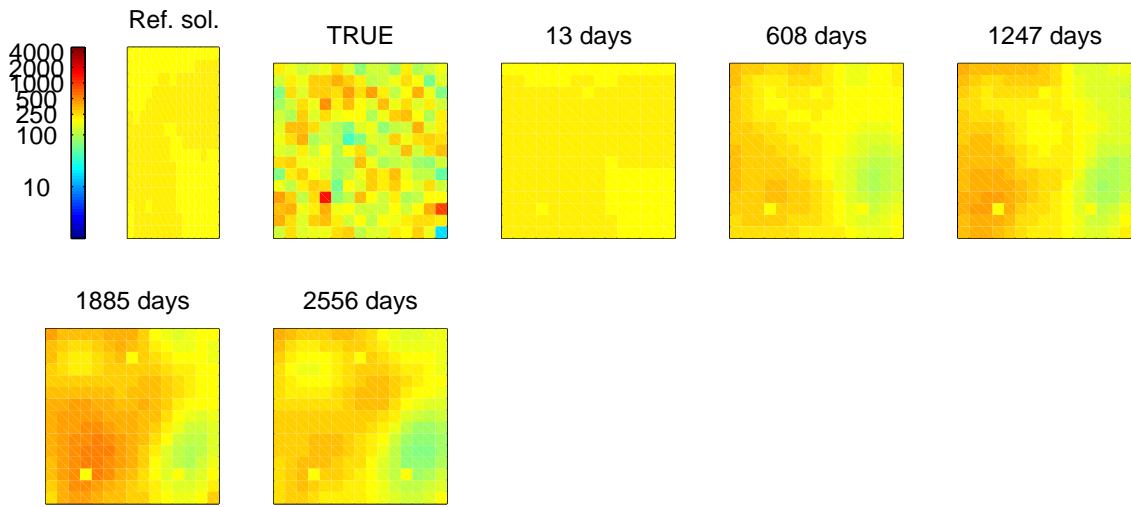


**Figure 115:** PERMY for ensemble member 1 for layer 8

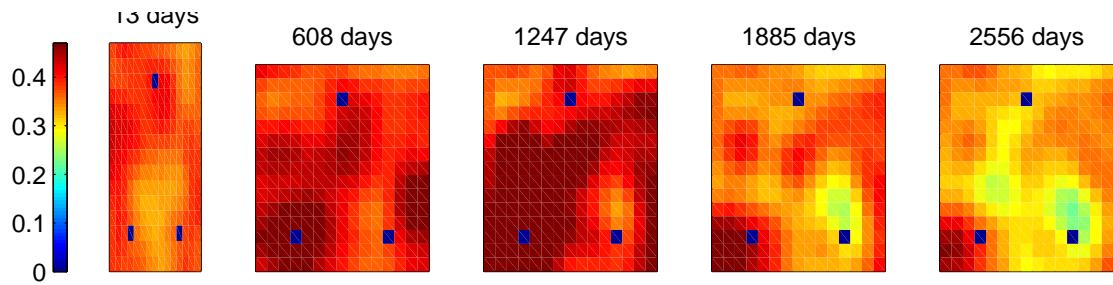


**Figure 116:** PERMY for ensemble member 2 for layer 8

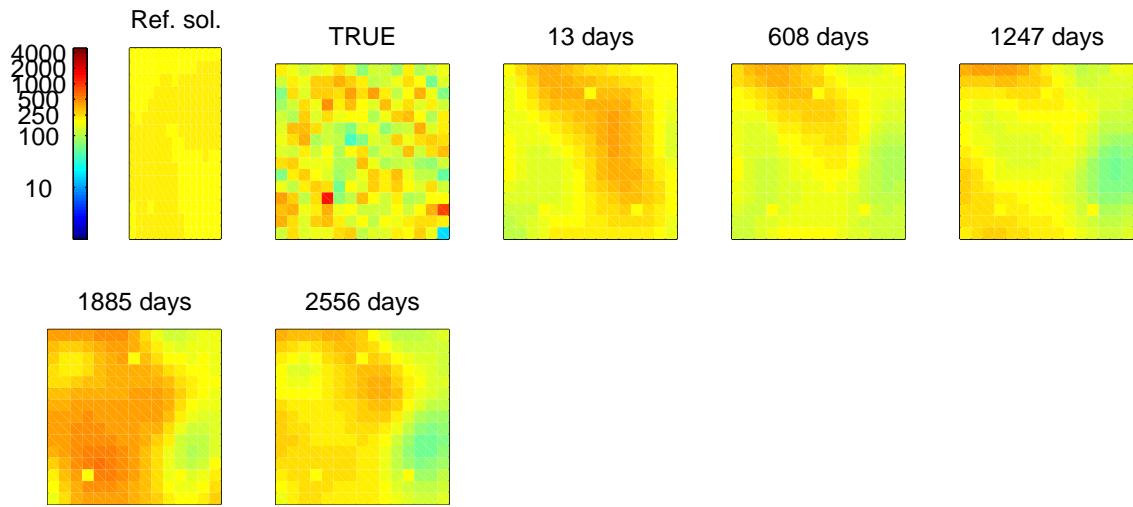
### 30 PERMY for layer 9



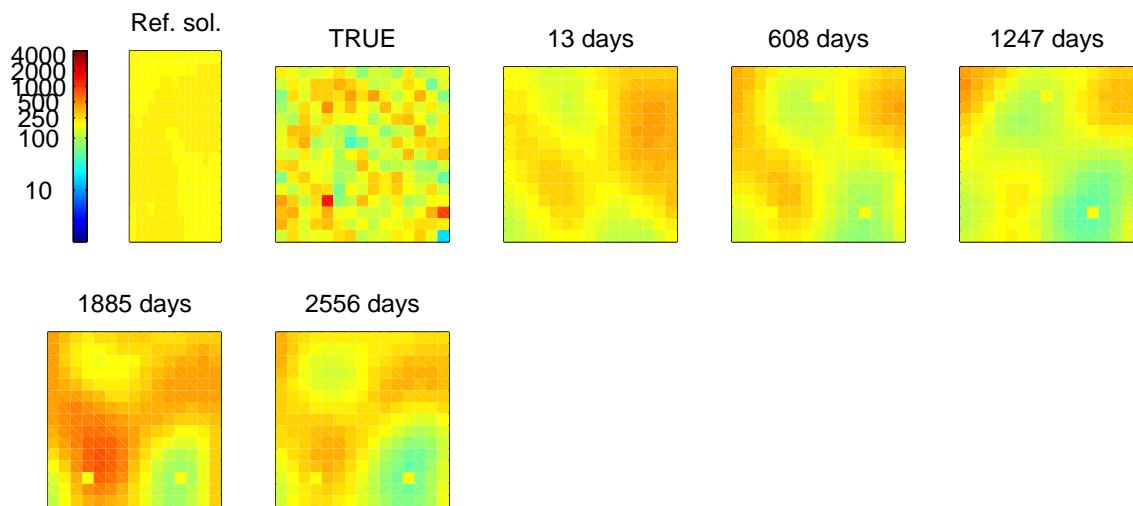
**Figure 117:** PERMY mean value for layer 9



**Figure 118:** PERMY standard deviation for layer 9

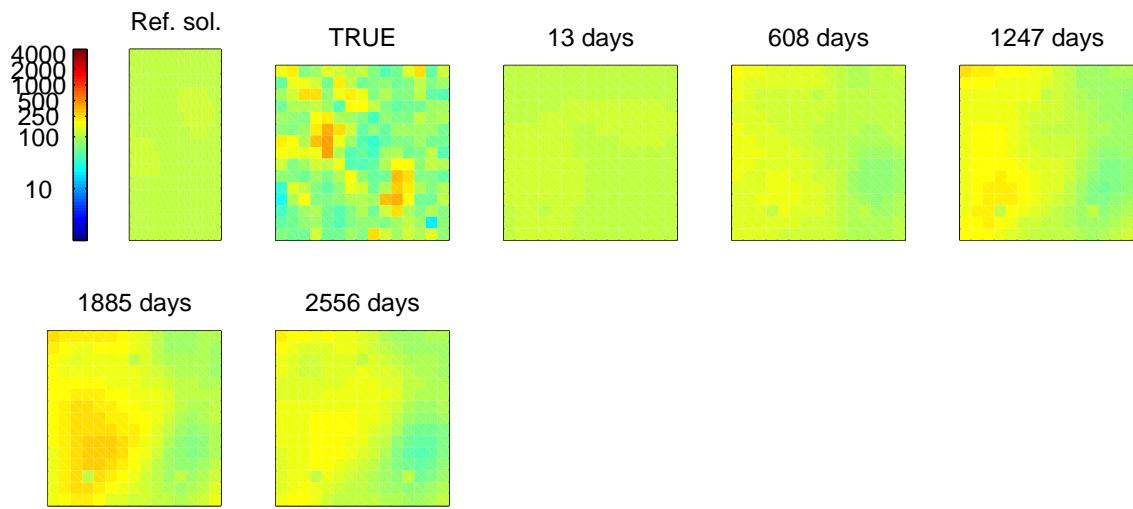


**Figure 119:** PERMY for ensemble member 1 for layer 9

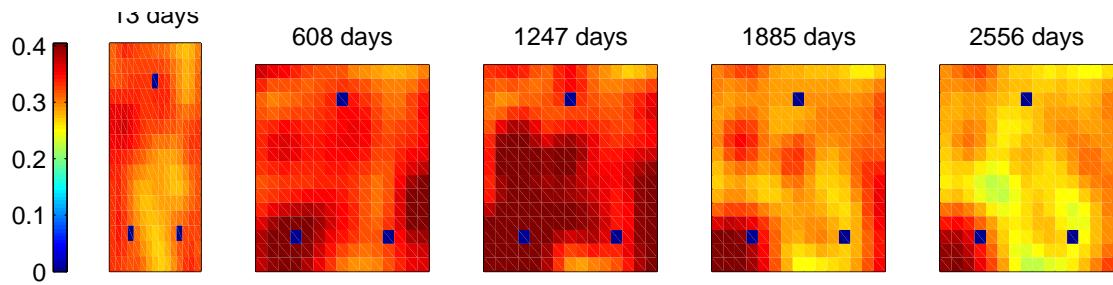


**Figure 120:** PERMY for ensemble member 2 for layer 9

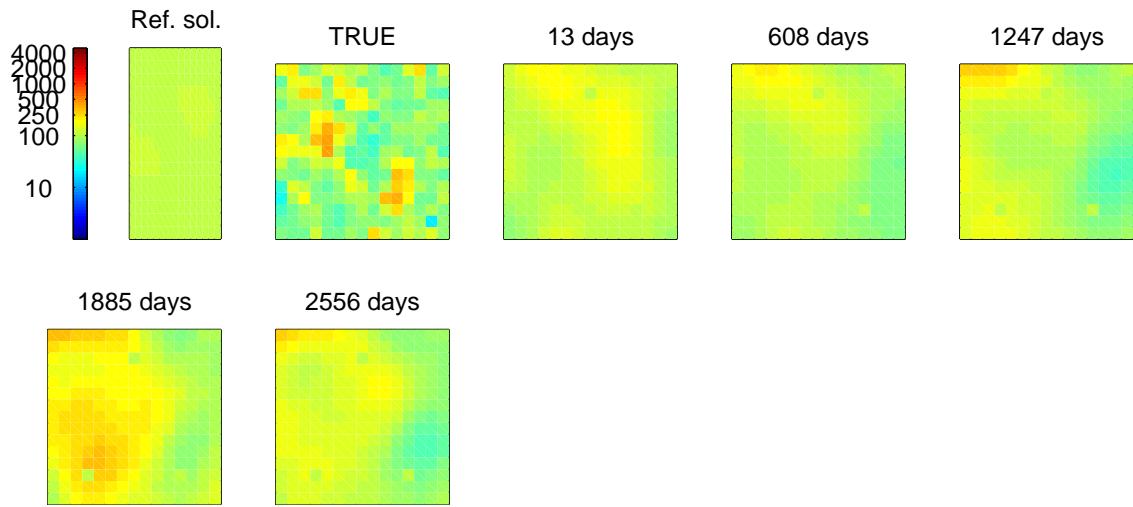
### 31 PERMY for layer 10



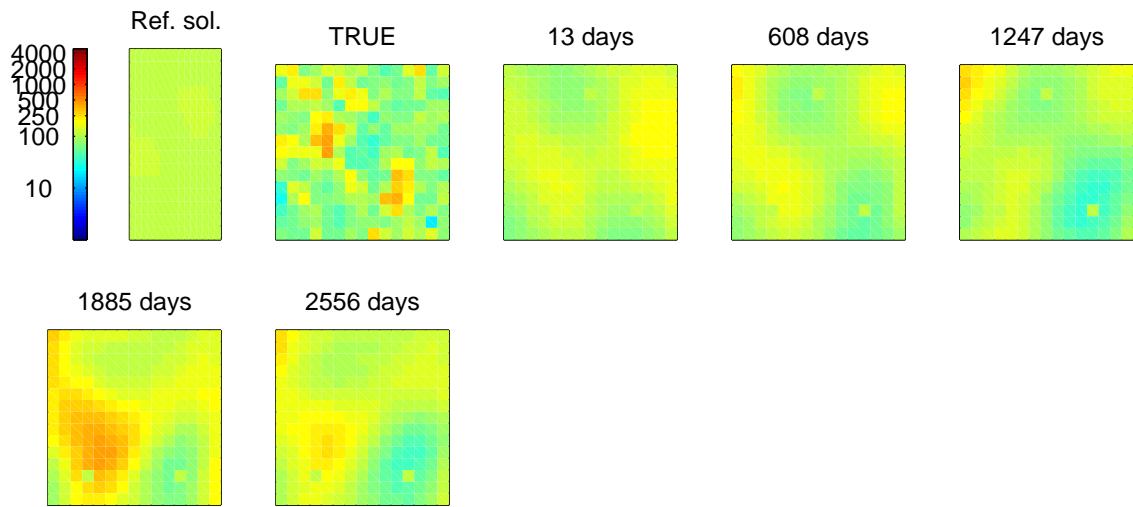
**Figure 121:** PERMY mean value for layer 10



**Figure 122:** PERMY standard deviation for layer 10

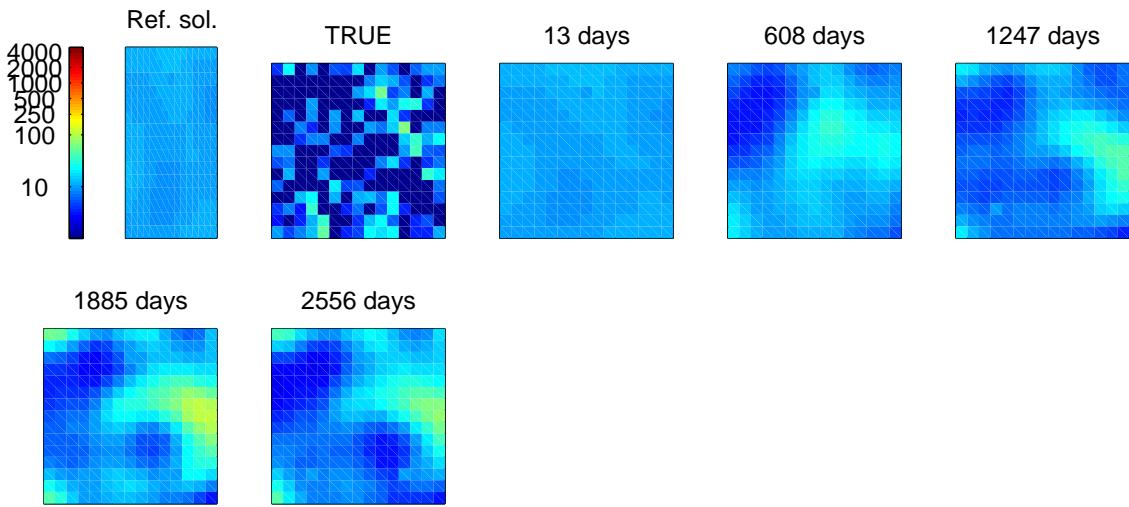


**Figure 123:** PERMY for ensemble member 1 for layer 10

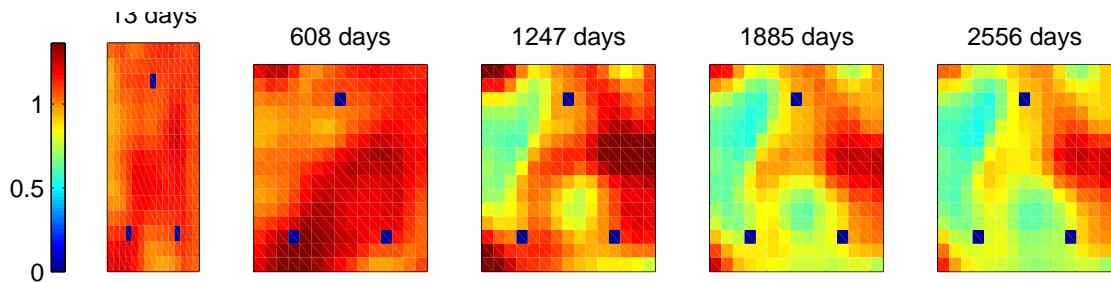


**Figure 124:** PERMY for ensemble member 2 for layer 10

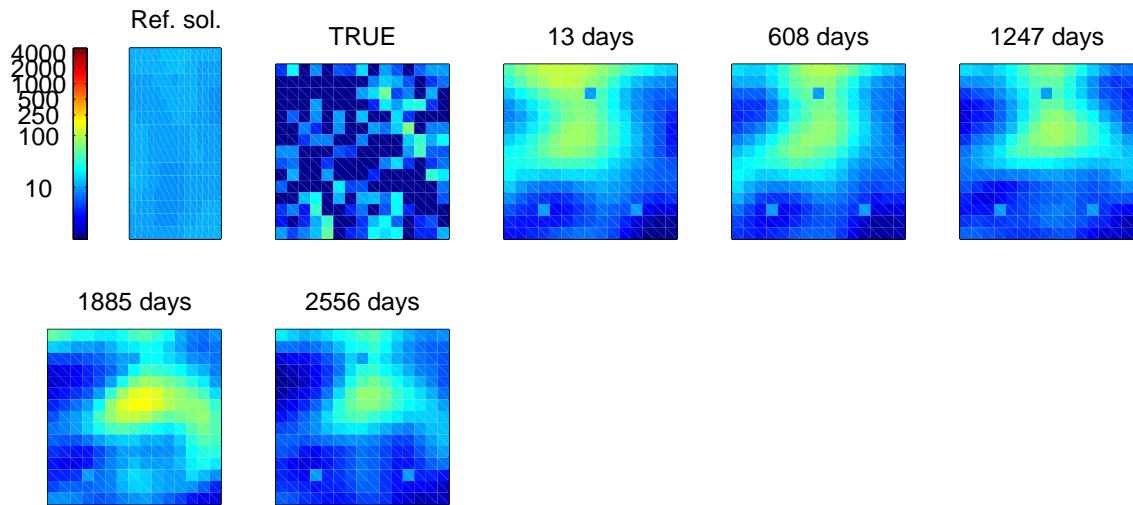
## 32 PERMZ for layer 1



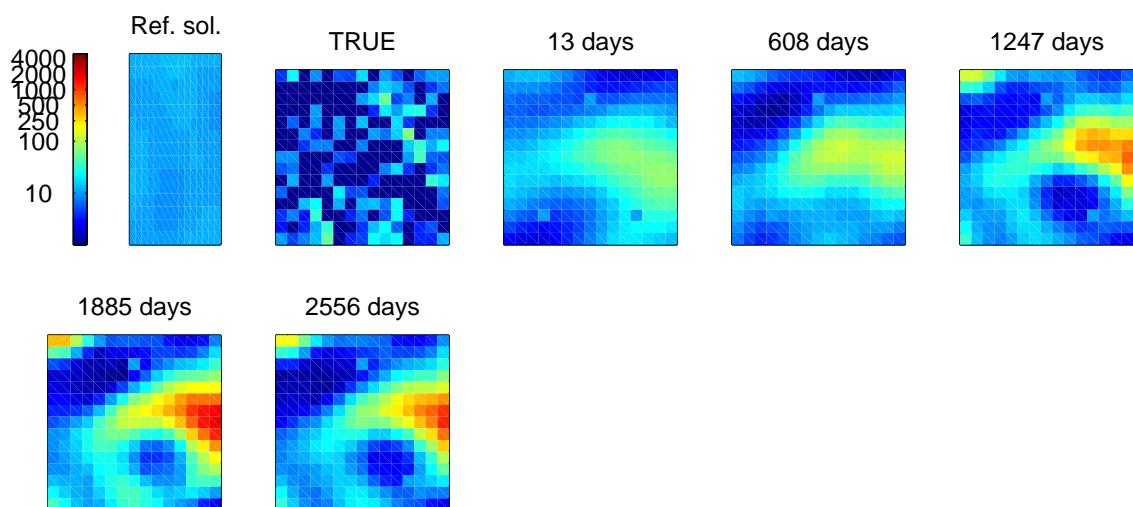
**Figure 125:** PERMZ mean value for layer 1



**Figure 126:** PERMZ standard deviation for layer 1

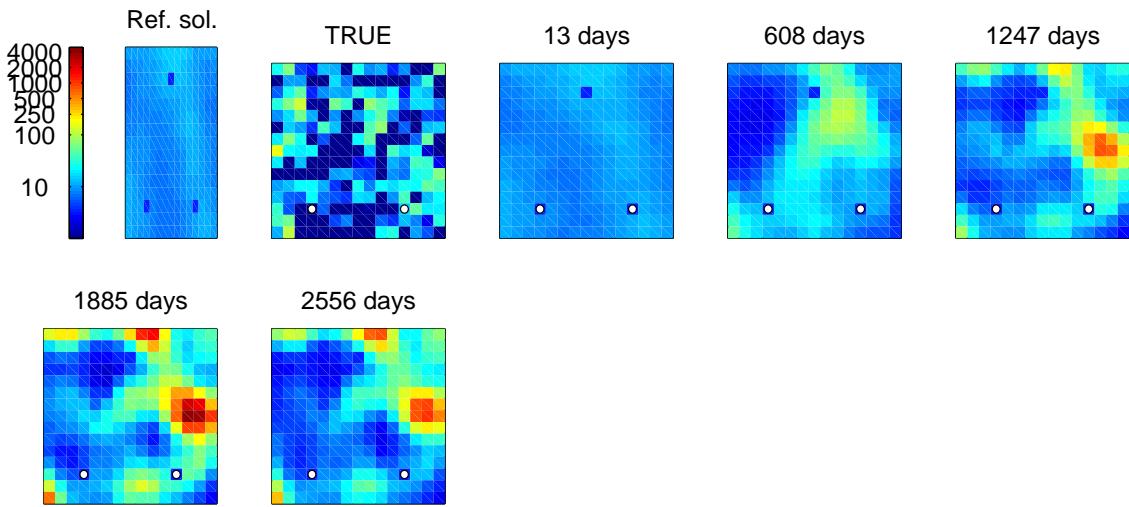


**Figure 127:**  $\text{PERMZ}$  for ensemble member 1 for layer 1

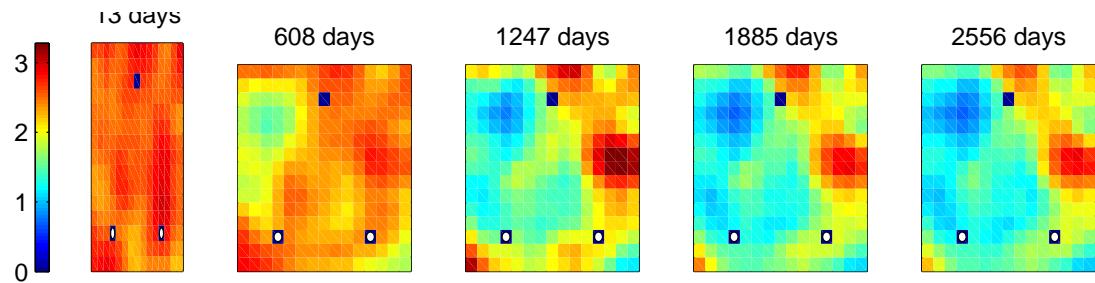


**Figure 128:**  $\text{PERMZ}$  for ensemble member 2 for layer 1

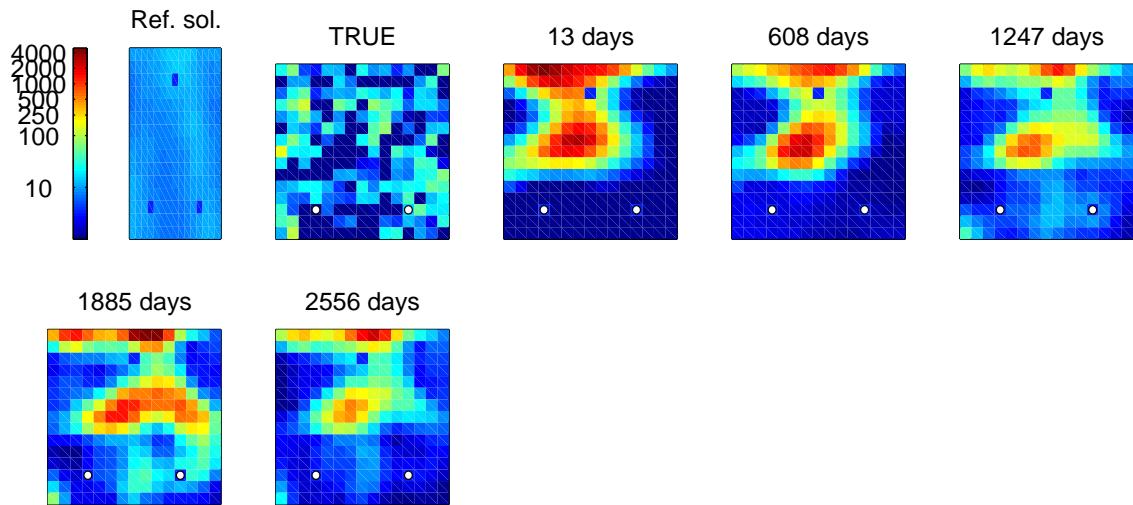
### 33 PERMZ for layer 2



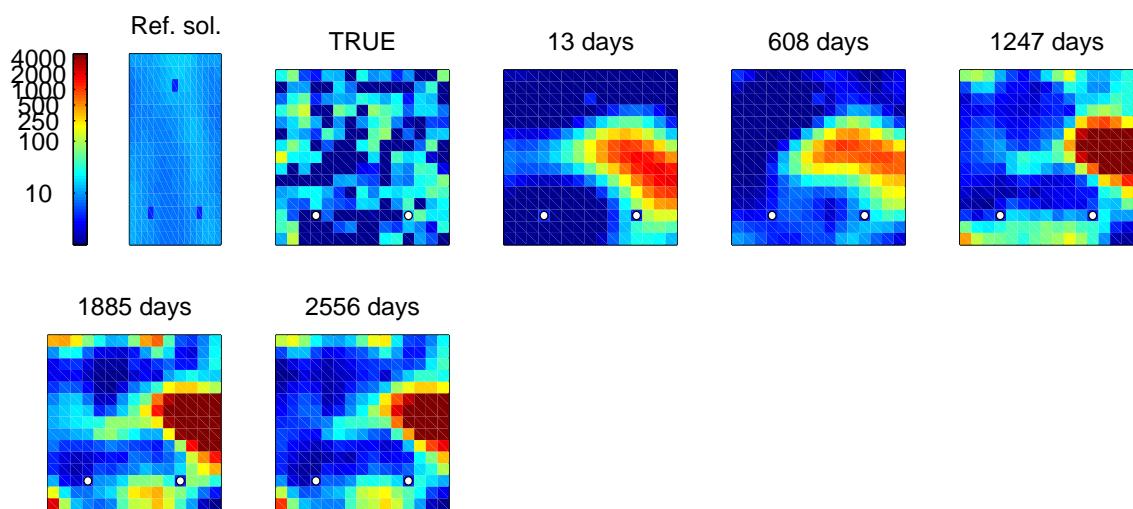
**Figure 129:** PERMZ mean value for layer 2



**Figure 130:** PERMZ standard deviation for layer 2

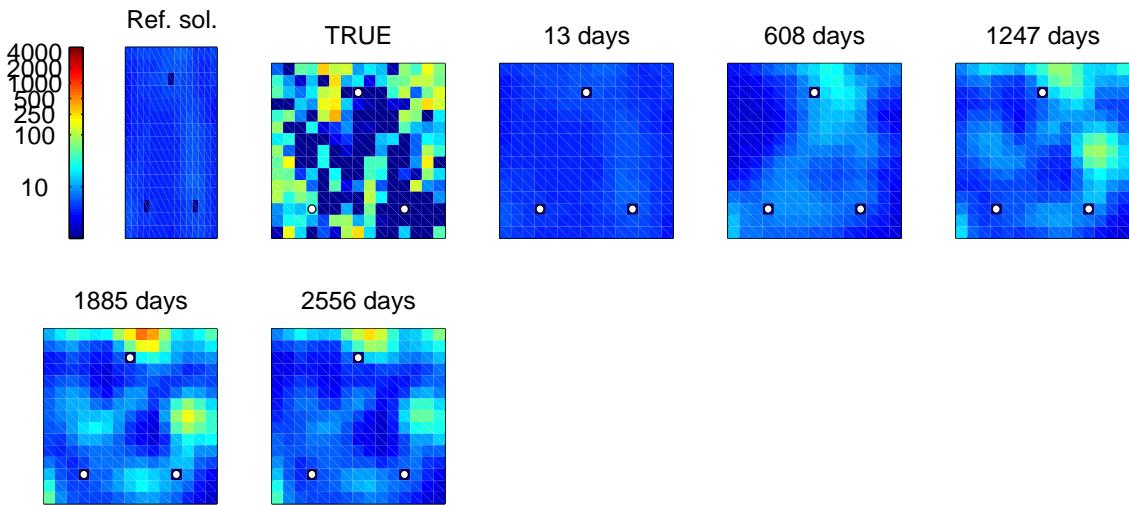


**Figure 131:**  $\text{PERMZ}$  for ensemble member 1 for layer 2

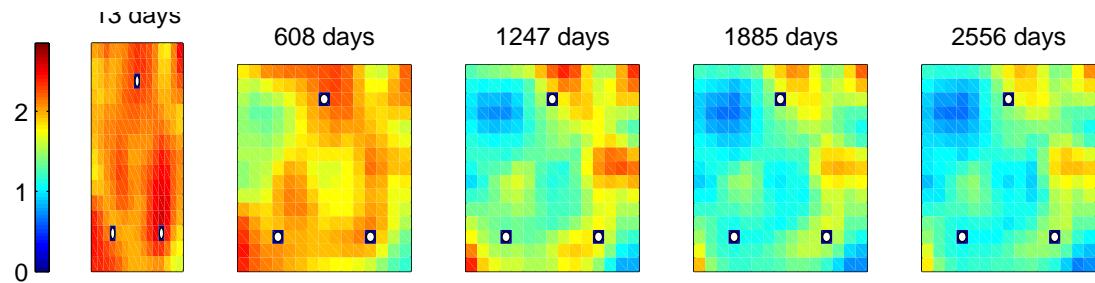


**Figure 132:**  $\text{PERMZ}$  for ensemble member 2 for layer 2

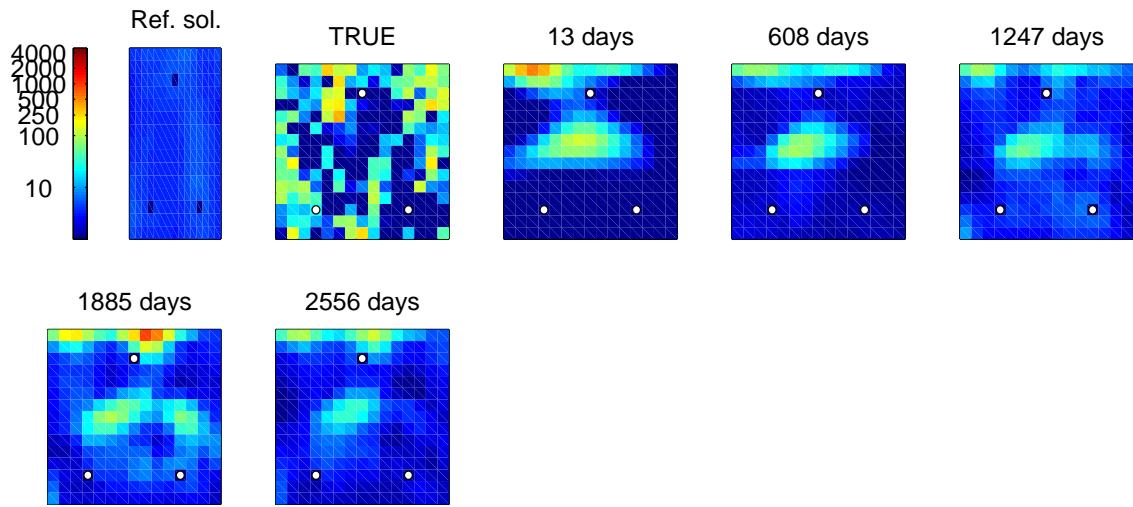
### 34 PERMZ for layer 3



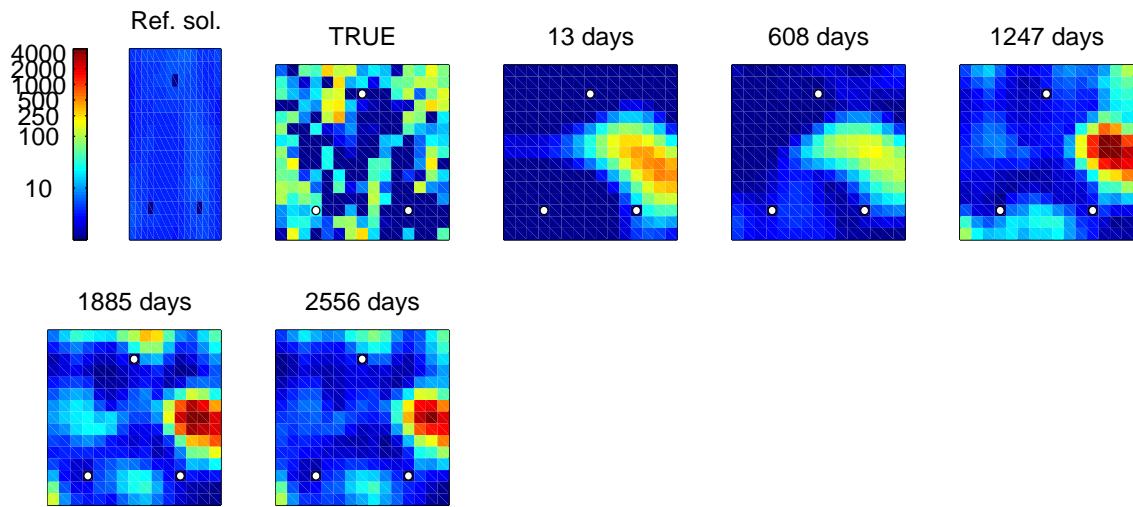
**Figure 133:** PERMZ mean value for layer 3



**Figure 134:** PERMZ standard deviation for layer 3

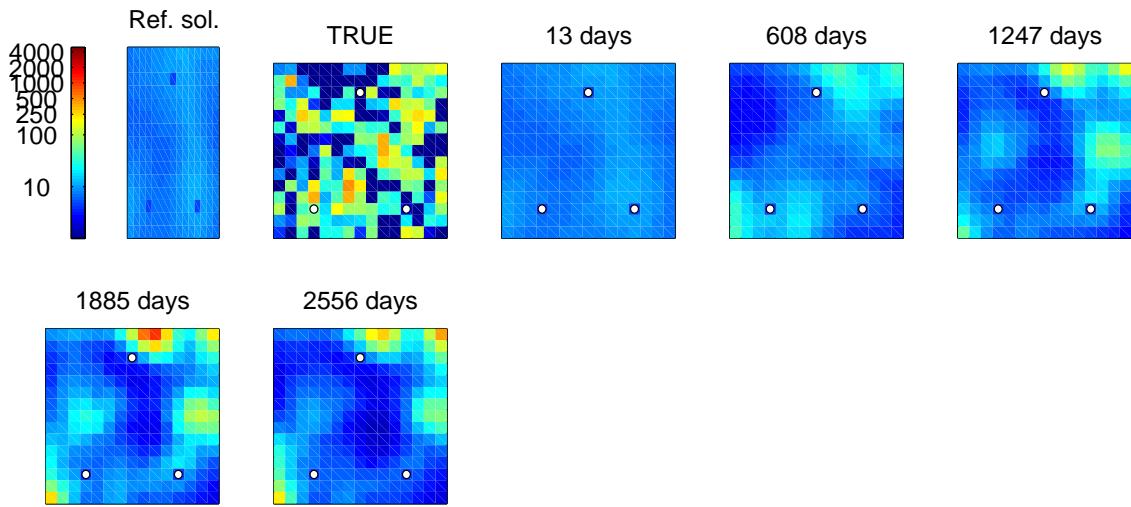


**Figure 135:**  $\text{PERMZ}$  for ensemble member 1 for layer 3

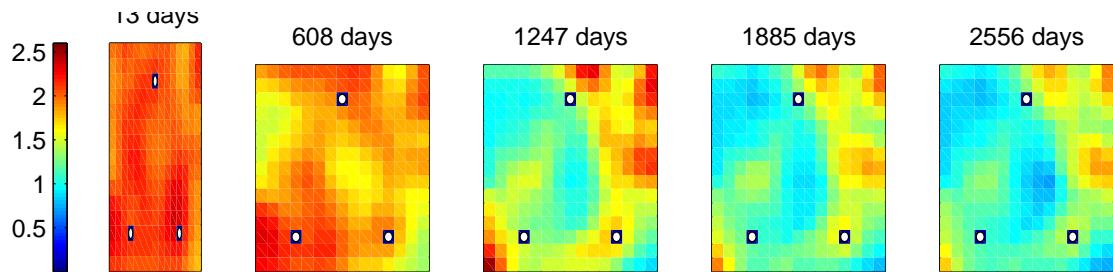


**Figure 136:**  $\text{PERMZ}$  for ensemble member 2 for layer 3

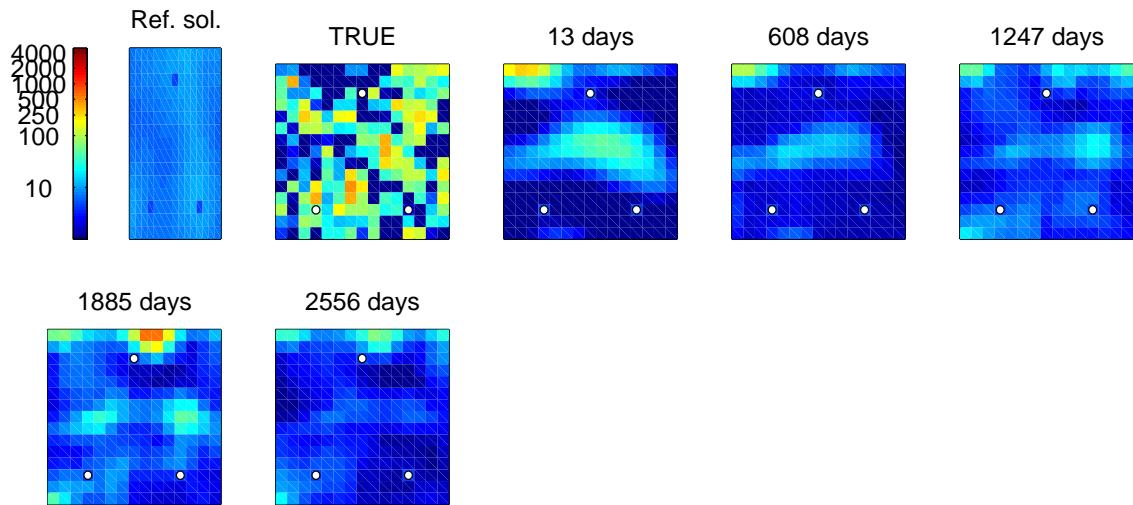
### 35 PERMZ for layer 4



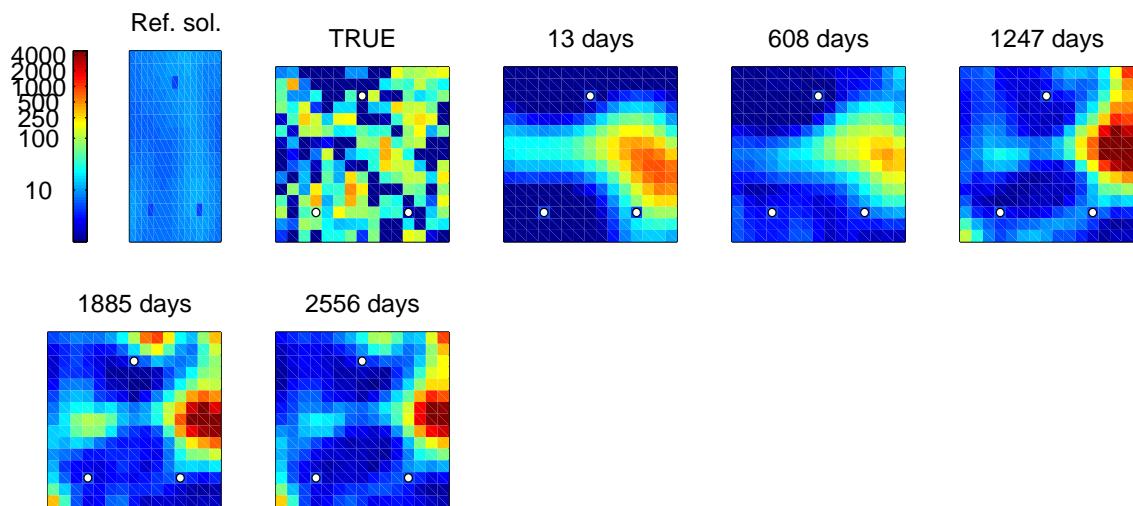
**Figure 137:** PERMZ mean value for layer 4



**Figure 138:** PERMZ standard deviation for layer 4

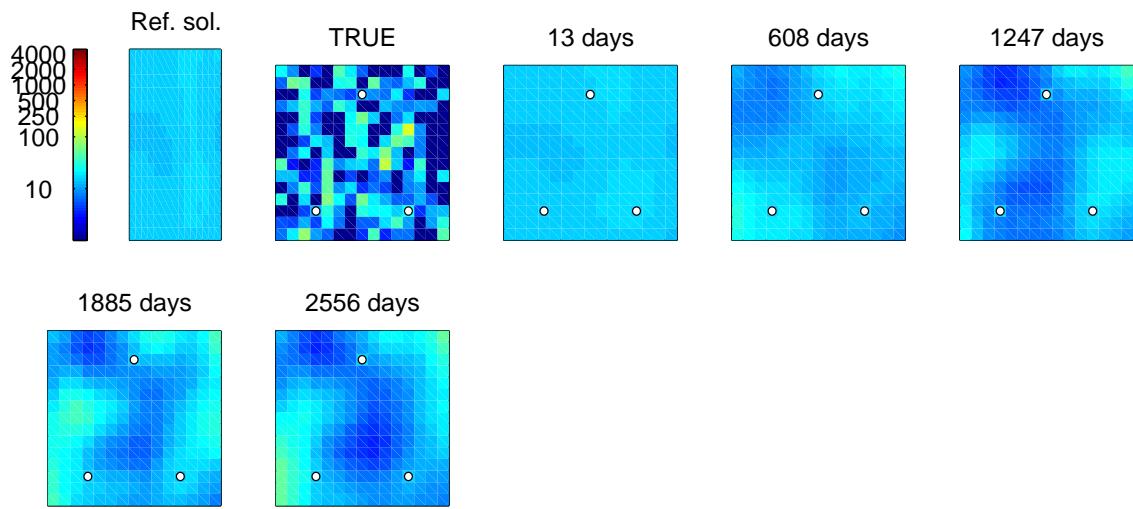


**Figure 139:** PERMZ for ensemble member 1 for layer 4

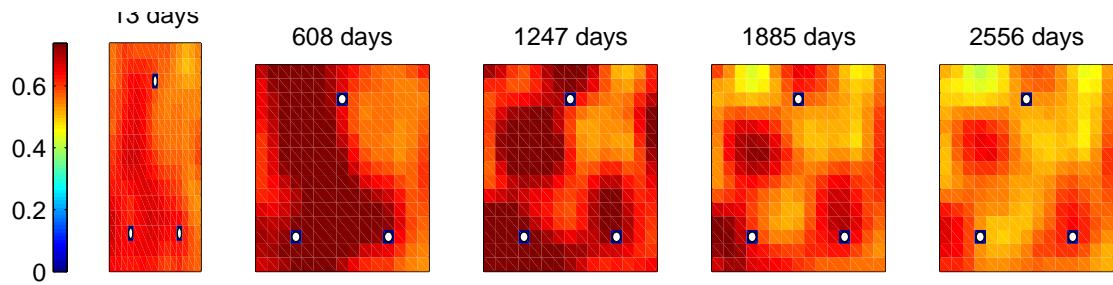


**Figure 140:** PERMZ for ensemble member 2 for layer 4

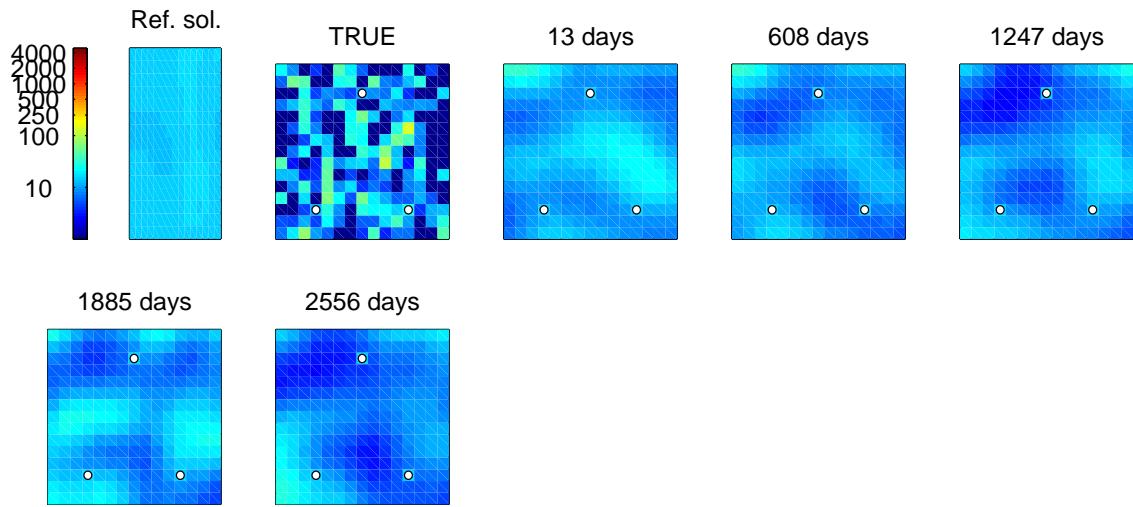
### 36 PERMZ for layer 5



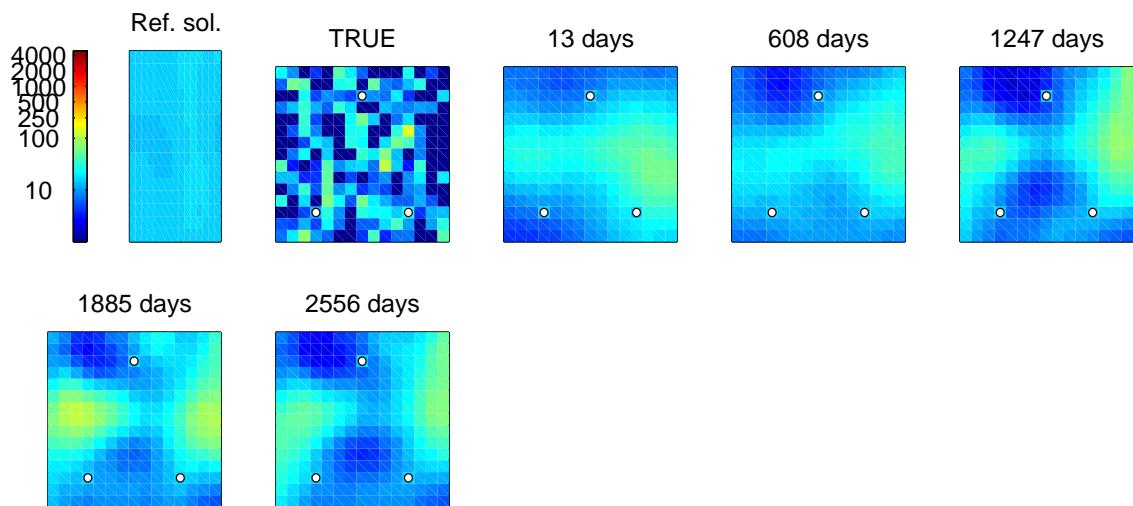
**Figure 141:** PERMZ mean value for layer 5



**Figure 142:** PERMZ standard deviation for layer 5

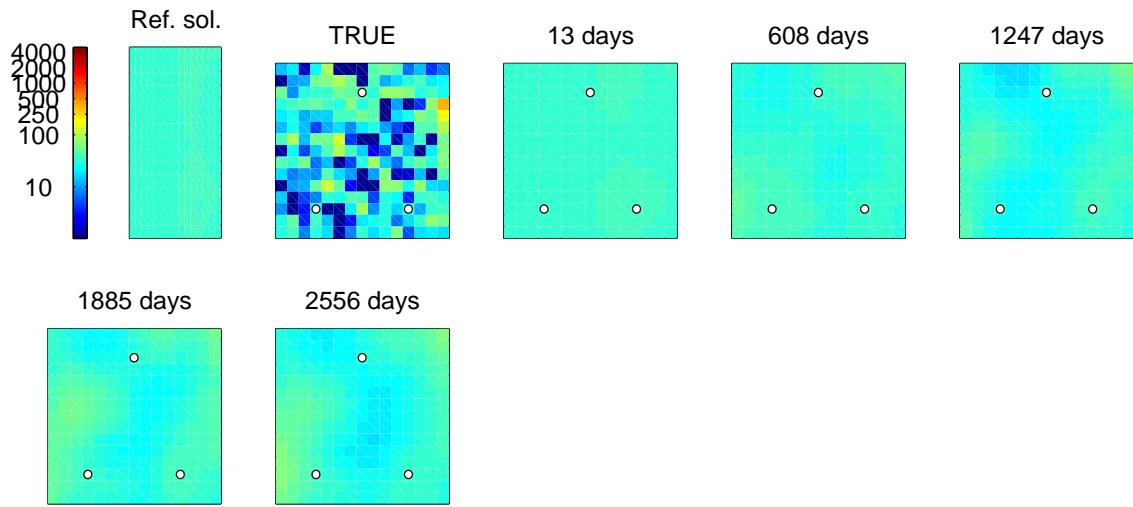


**Figure 143:** PERMZ for ensemble member 1 for layer 5

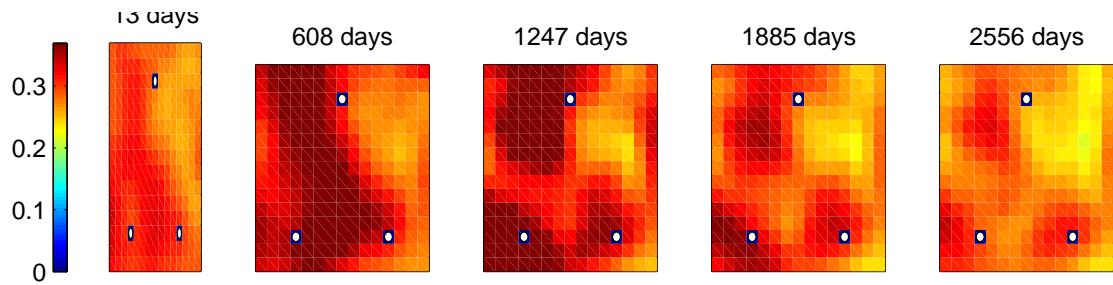


**Figure 144:** PERMZ for ensemble member 2 for layer 5

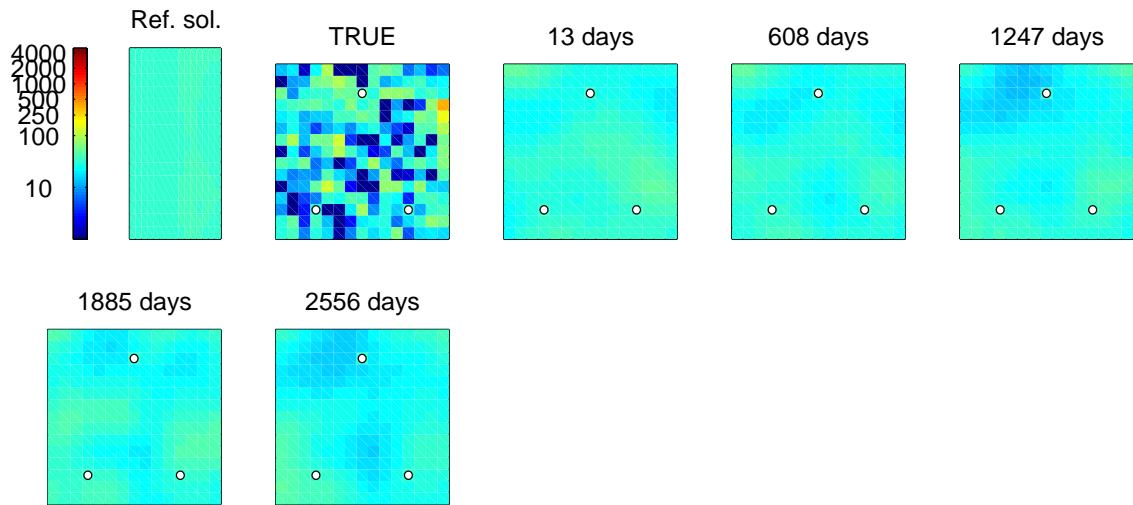
### 37 PERMZ for layer 6



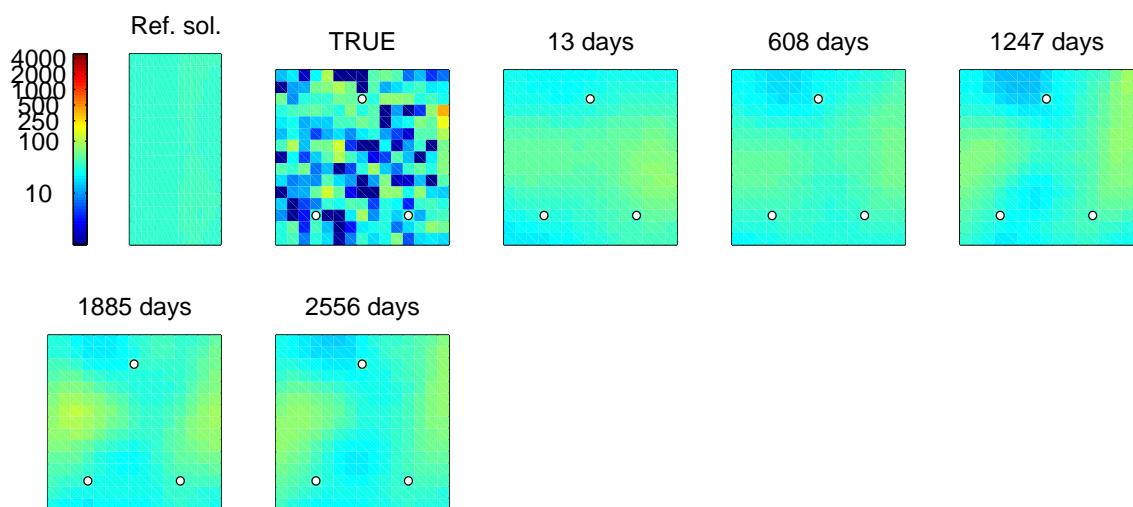
**Figure 145:** PERMZ mean value for layer 6



**Figure 146:** PERMZ standard deviation for layer 6

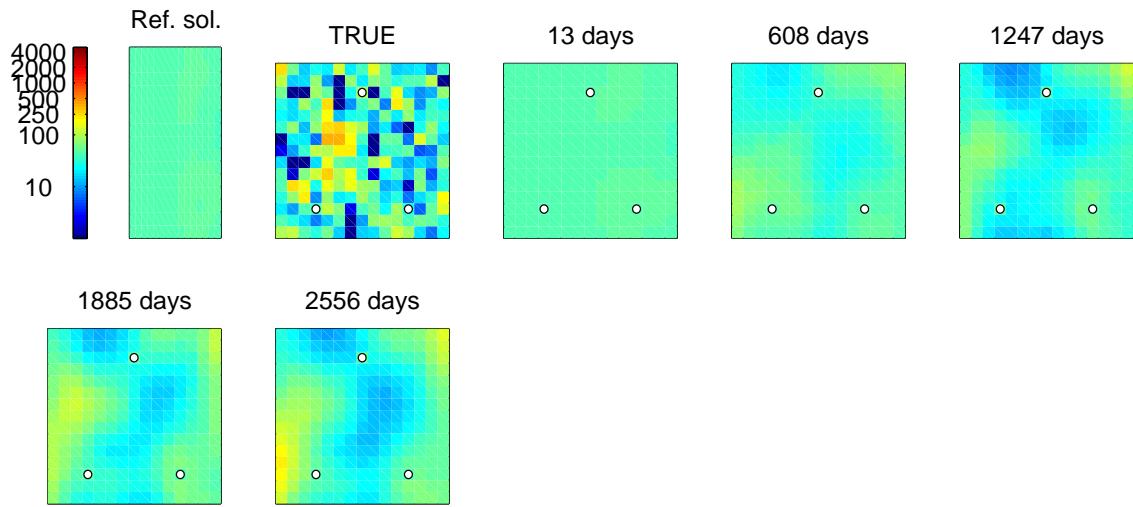


**Figure 147:** PERMZ for ensemble member 1 for layer 6

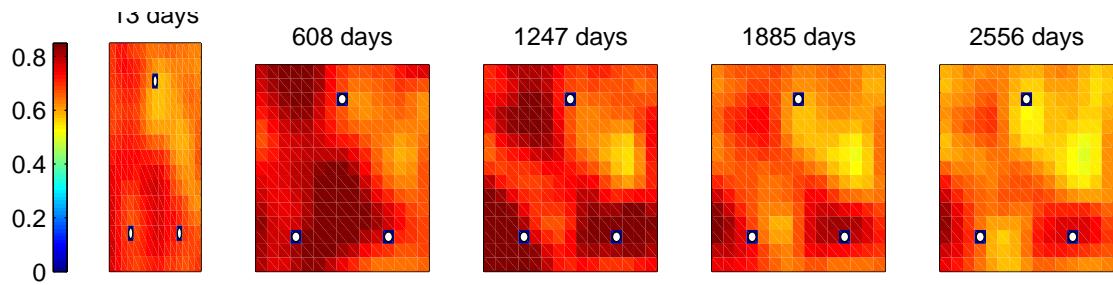


**Figure 148:** PERMZ for ensemble member 2 for layer 6

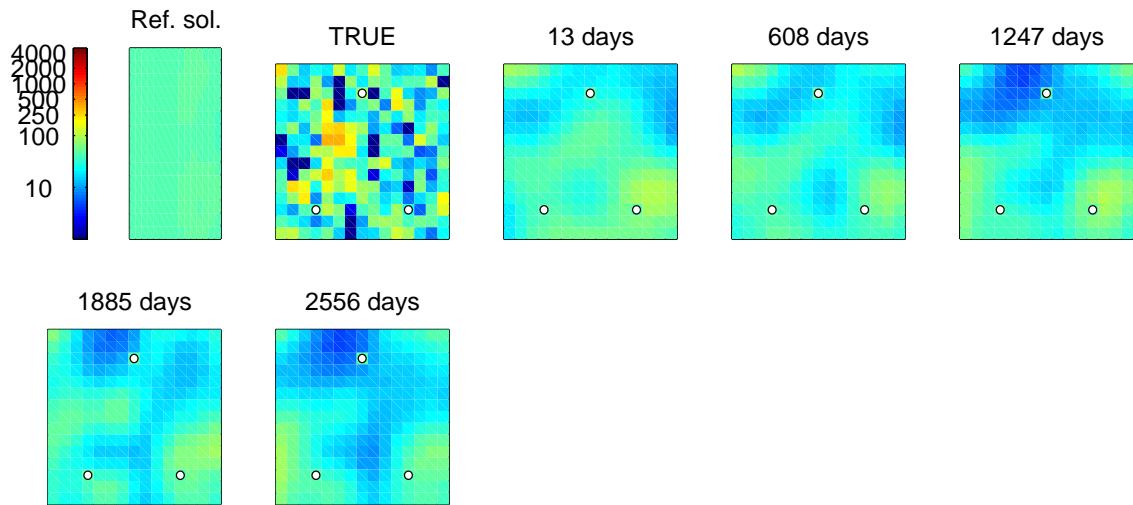
### 38 PERMZ for layer 7



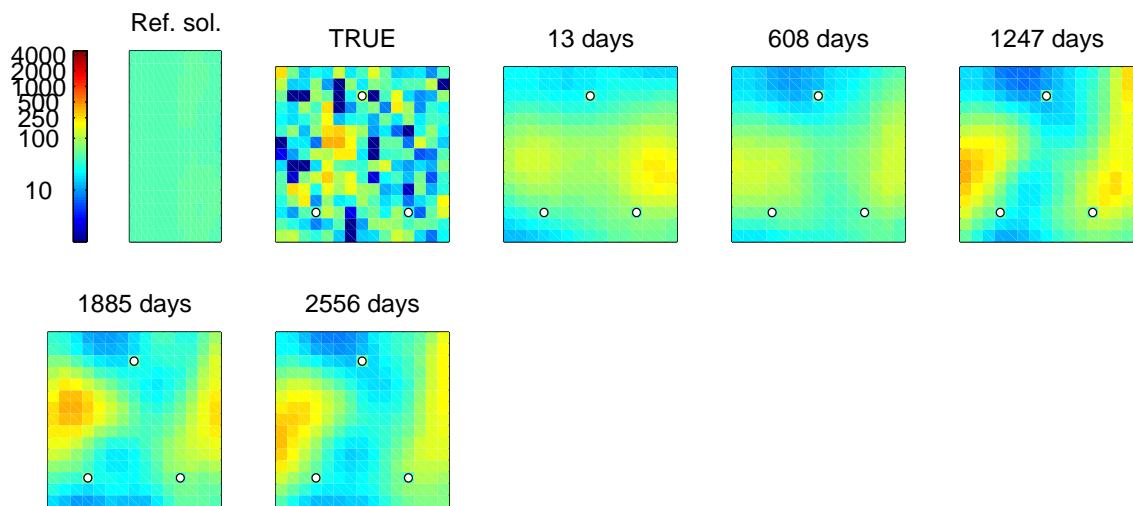
**Figure 149:** PERMZ mean value for layer 7



**Figure 150:** PERMZ standard deviation for layer 7

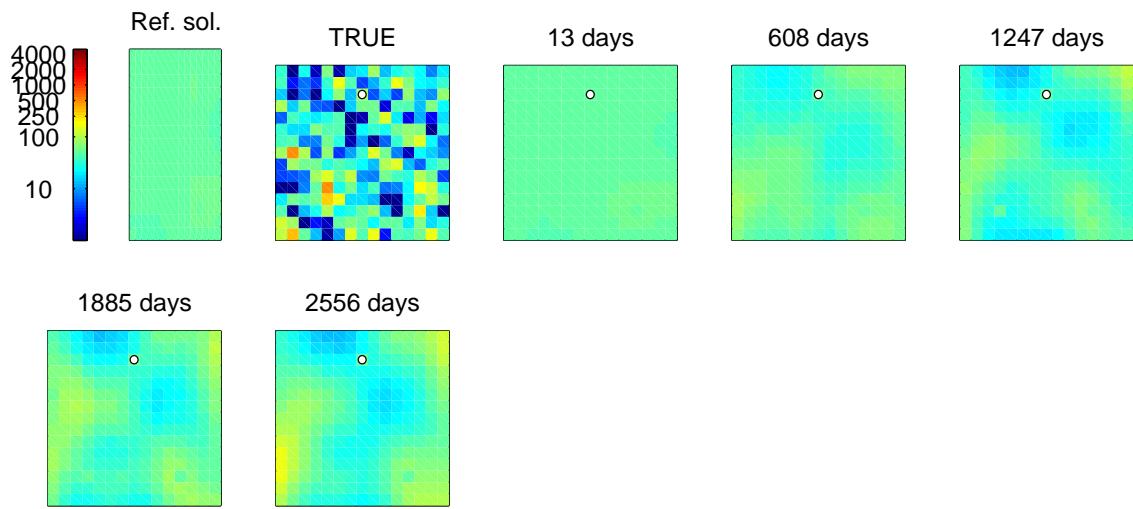


**Figure 151:** PERMZ for ensemble member 1 for layer 7

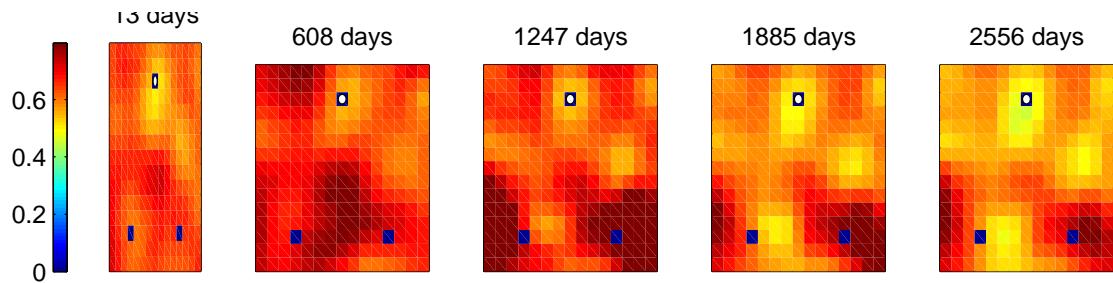


**Figure 152:** PERMZ for ensemble member 2 for layer 7

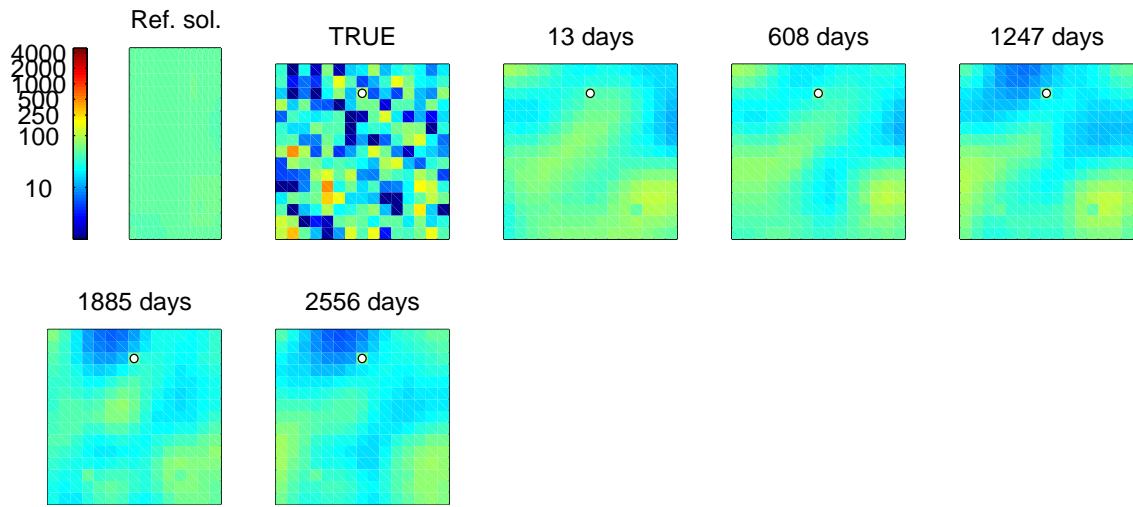
### 39 PERMZ for layer 8



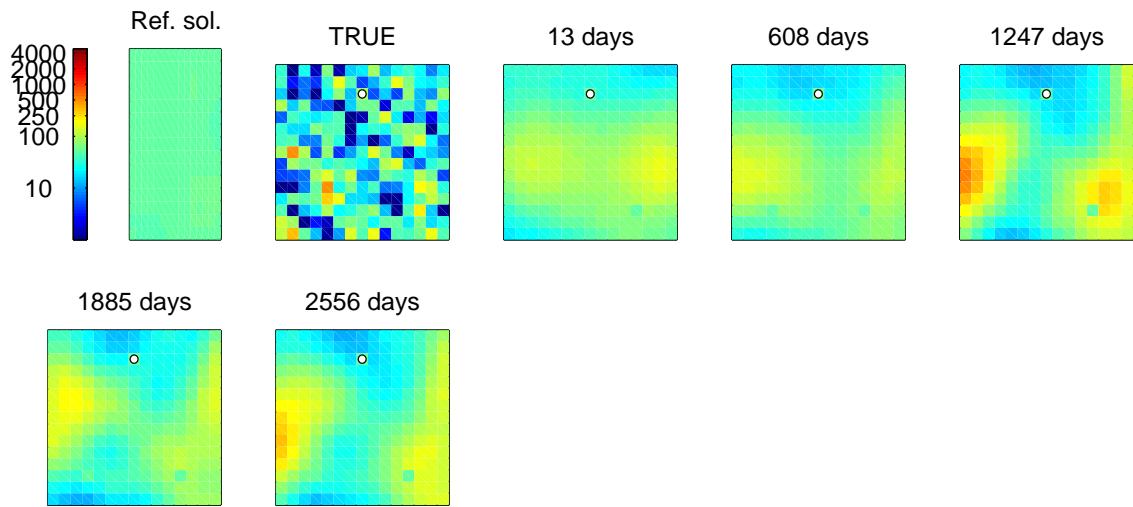
**Figure 153:** PERMZ mean value for layer 8



**Figure 154:** PERMZ standard deviation for layer 8

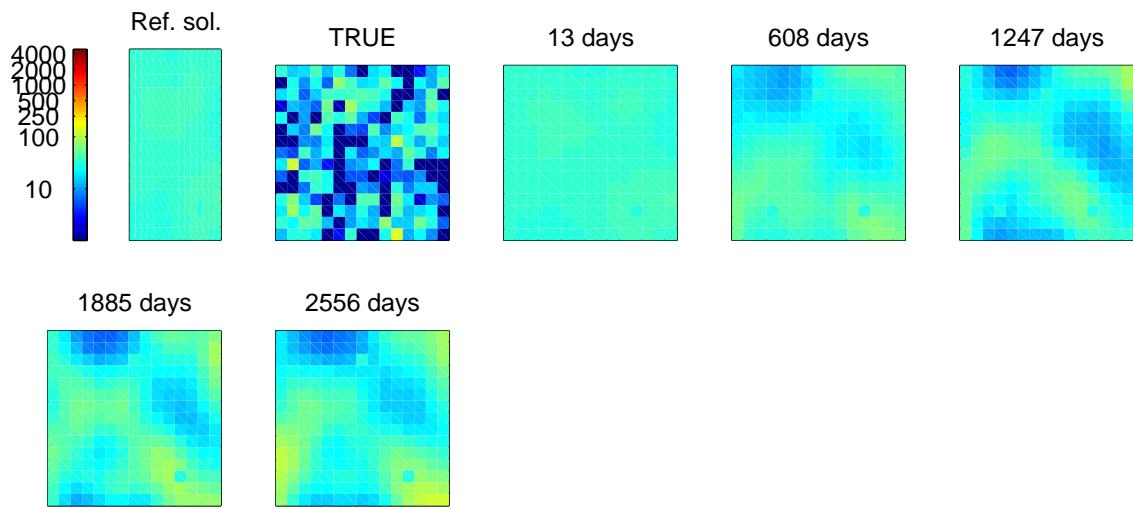


**Figure 155:**  $\text{PERMZ}$  for ensemble member 1 for layer 8

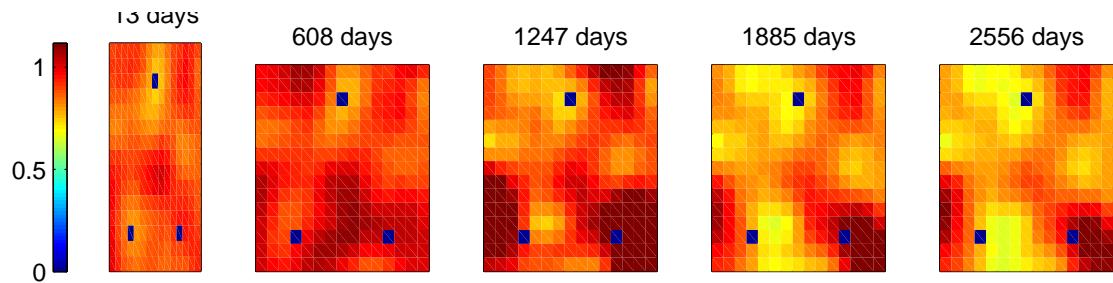


**Figure 156:**  $\text{PERMZ}$  for ensemble member 2 for layer 8

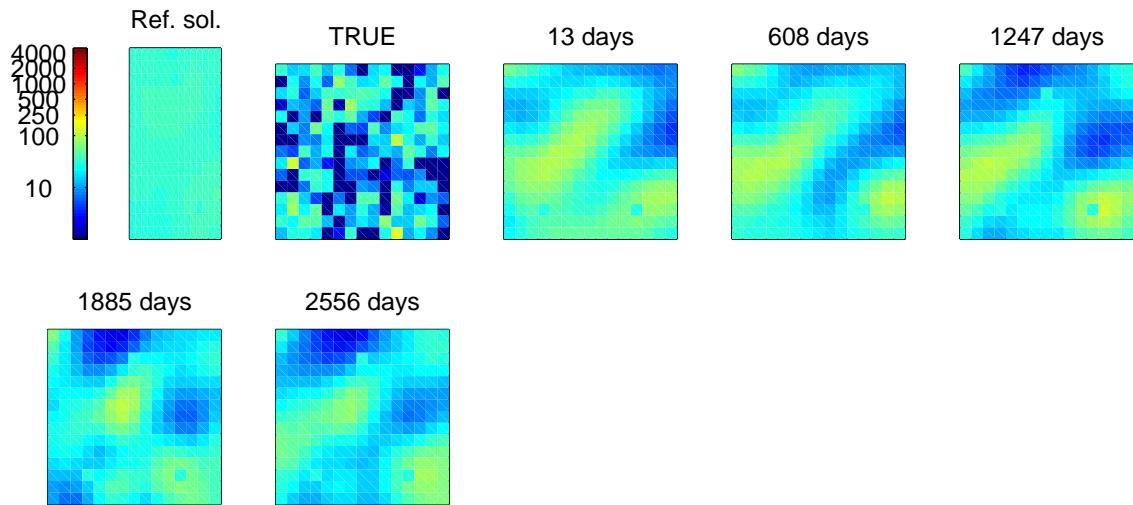
## 40 PERMZ for layer 9



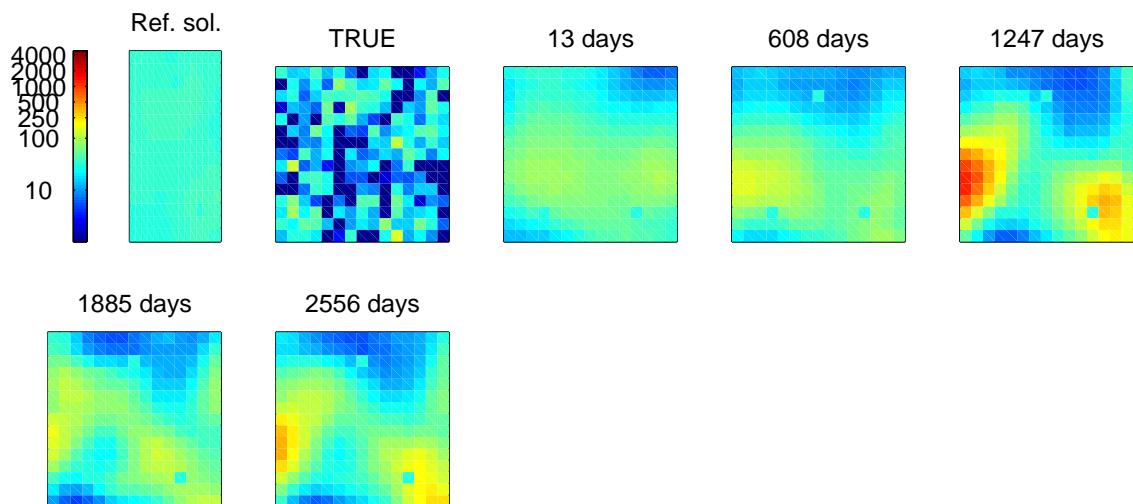
**Figure 157:** PERMZ mean value for layer 9



**Figure 158:** PERMZ standard deviation for layer 9

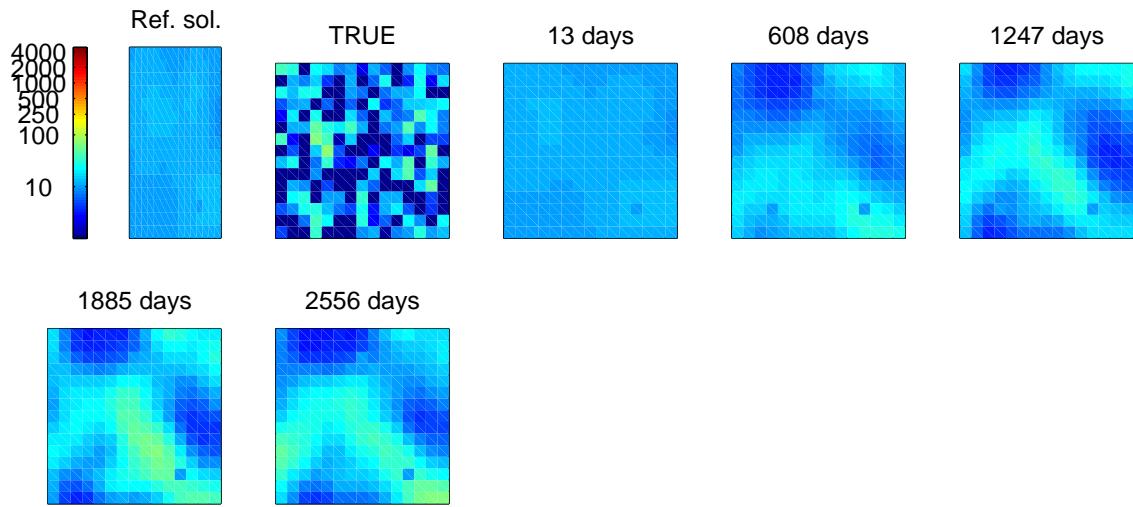


**Figure 159:**  $\text{PERMZ}$  for ensemble member 1 for layer 9

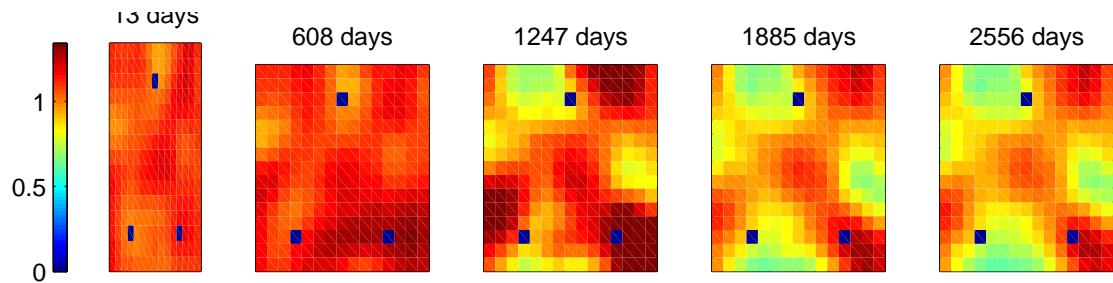


**Figure 160:**  $\text{PERMZ}$  for ensemble member 2 for layer 9

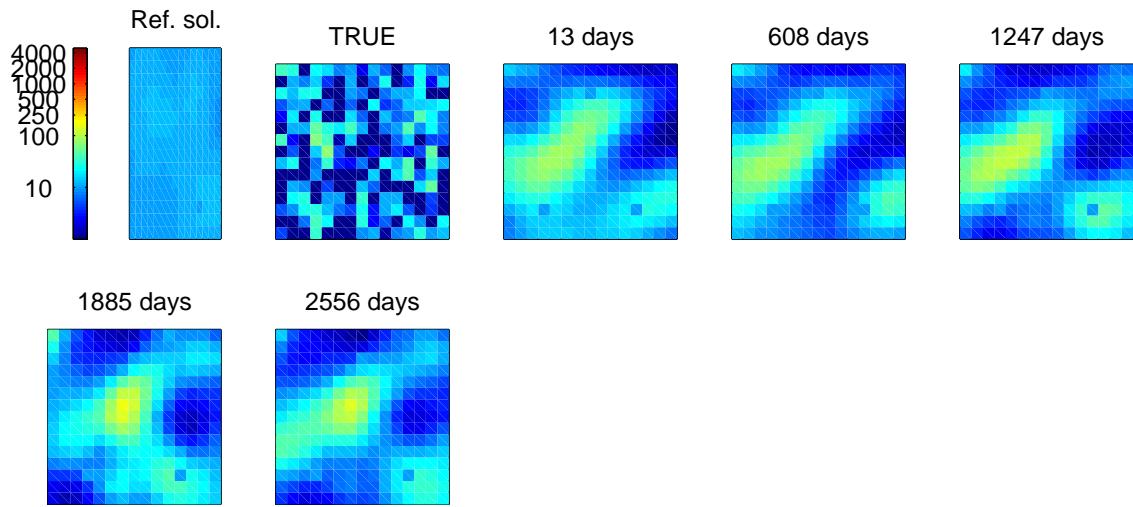
## 41 PERMZ for layer 10



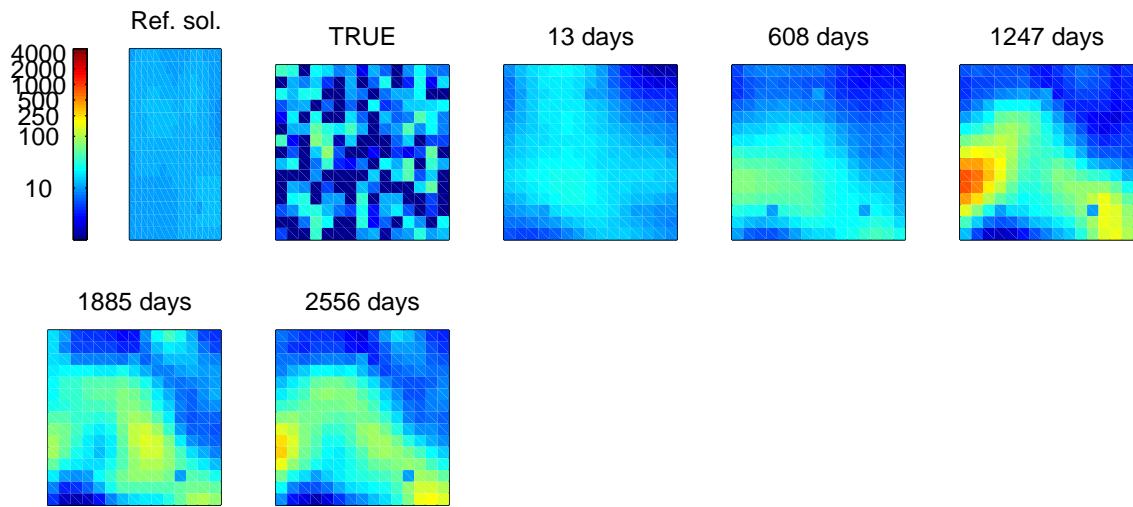
**Figure 161:** PERMZ mean value for layer 10



**Figure 162:** PERMZ standard deviation for layer 10



**Figure 163:**  $\text{PERMZ}$  for ensemble member 1 for layer 10



**Figure 164:**  $\text{PERMZ}$  for ensemble member 2 for layer 10