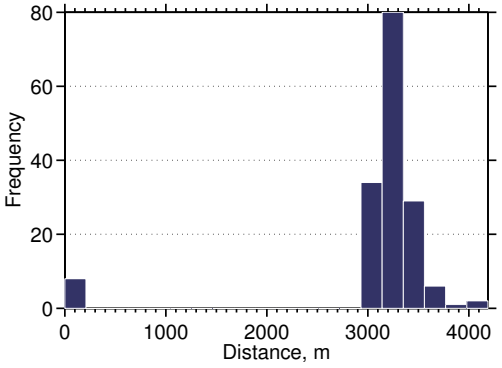
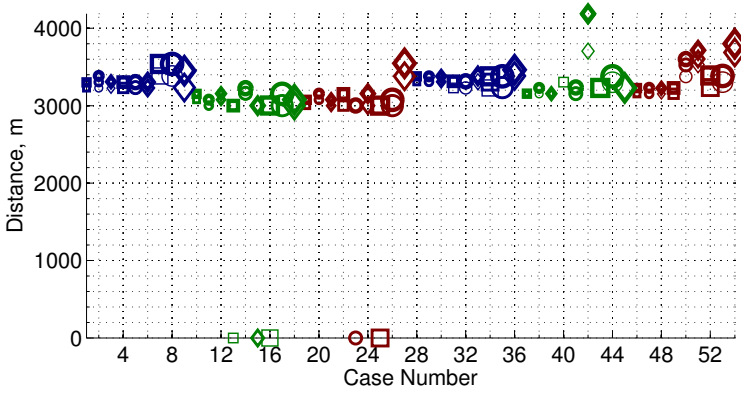
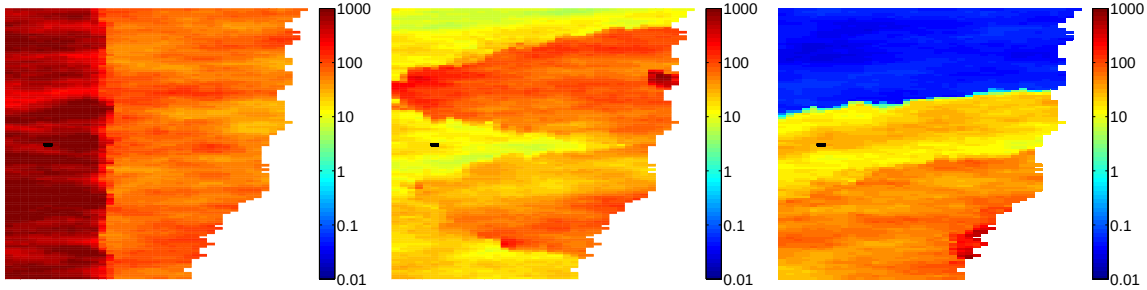


(a) Pressure-constrained scenario.



(b) Pressure-constrained scenario.

Figure 17: The farthest pulse of the pressure build-up distance from the injection point for all cases in the pressure-constrained scenario.



(a) (b) (c)

Figure 18: Permeability of three cases in unit millidarcies shown in color, and the Well location is illustrated with black color on each plot . Top view is shown in the plots.

that dont follow the lines in Figure 15b).

Several cases in Figure 15b show a trend for the fault parameter. The dashed line in the figure shows the trend of build-up pressure increase due to fault feature variations in three cases. Faulting changes the geometry of layers and puts different layers adjacent to each other. This enhances the connectivity in the medium. Local heterogeneities and closed faults around the injector make a larger build-up region, because they cause higher pressure build-up in the domain. In these cases, the effect of heterogeneity of different scales, namely on the scale of near injector and far from injector, are combined causing a larger buildup fraction.

4.5 Farthest pulse

As discussed earlier, irregular geometries like faults and unconformities can lead to pressure spread in the domain. Looking at the volume fraction of pressurized and buildup regions helps in comparing cases for their pressure conductivity, but it does not show the extent of pressure spread in the medium. For that reason, we also look at the farthest cell from the