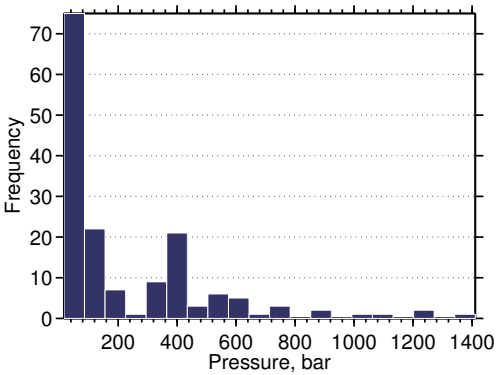
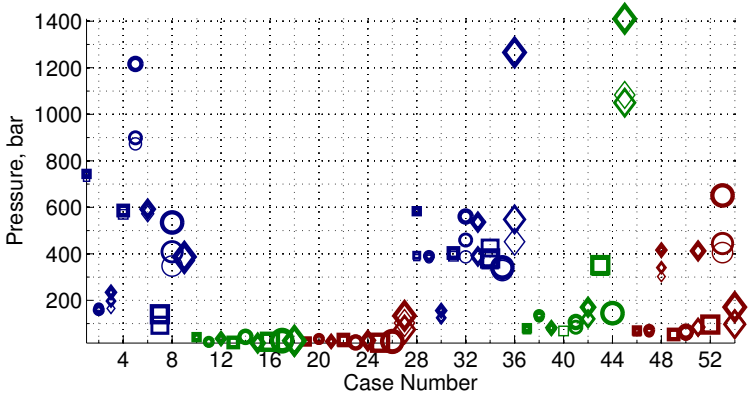
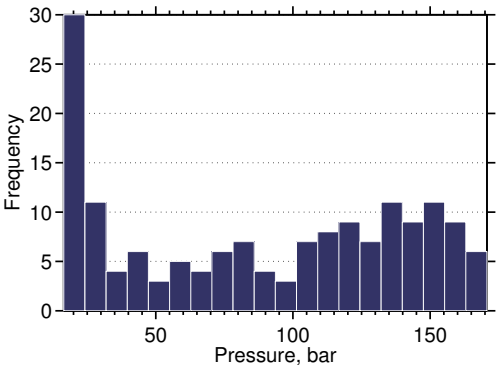


(a) Histogram of pressure drop values.

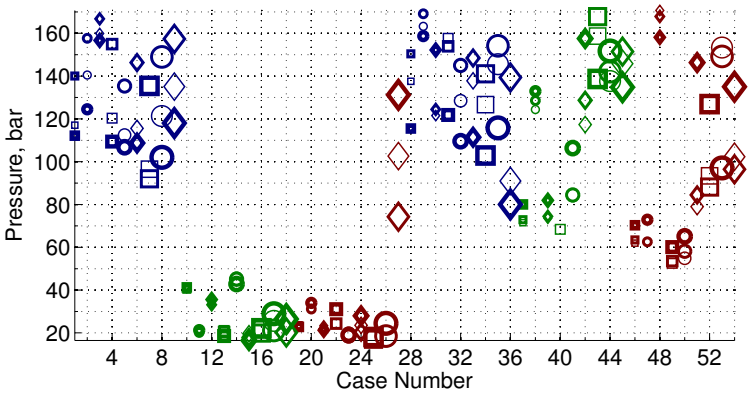


(b) Case plot of pressure drop values.

Figure 8: Average of injector pressure drop for all cases in the rate-constrained scenario.



(a) Histogram of pressure drop values.



(b) Case plot of pressure drop values.

Figure 9: Average of injector pressure drop for all cases in the pressure-constrained scenario.

a small group of cases show lower pressures, while most of cases are distributed around the mean value (which reads 300 bar).

We define the average well pressure drop as the temporal average of the difference between the bottom-hole pressure and the average aquifer pressure.

Histograms of well pressure drop values are shown in Figures 8a and 9a. Higher values imply a poor injectivity of the medium. We see in Figure 8 that maintaining the target rate will in many cases require a huge pressure drop (up to 1400 bar in the worst cases) that would not be feasible nor possible to obtain. Pressure control on the injector reduces the range of pressure drop variation below 170 bar. The average injector pressure drop is plotted for all cases in Figures 8b and 9b.

Two regions can be identified in the medium, the region near the injection point; and the part of aquifer which is far from the injection point. The well-bore pressure is effected directly by heterogeneities in the near well-bore region, while the larger scale region influences the average aquifer pressure. Pressure drop variations in Figures 8a and 8b are influenced by the heterogeneity near the well-bore, where the reaction to injecting a fixed amount of CO_2