

We have performed new investigations applying our Lagrangian algorithm described by Alessandrini et al. (2013) to simulate the plume rise in a convective boundary layer capped by a strong inversion layer. We tested our model with the results of a water tank experiment (Weil et al., 2002). For each case, we compared the simulated and measured mean height, horizontal and vertical plume standard deviations and the entrainment (the fraction of the plume that remains captured above the temperature inversion layer located at the top of the boundary layer). The results show that the model is able to reproduce the main characteristics of the plume accurately.

