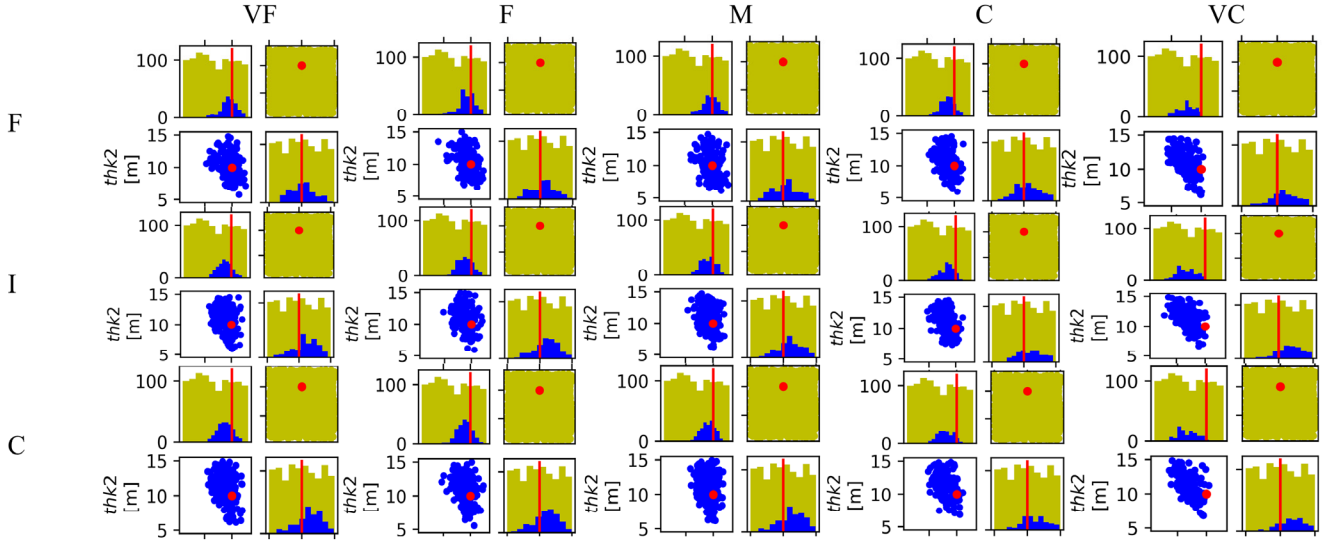


Supplementary Materials:

(a) 1st Iteration



(b) 4th Iteration

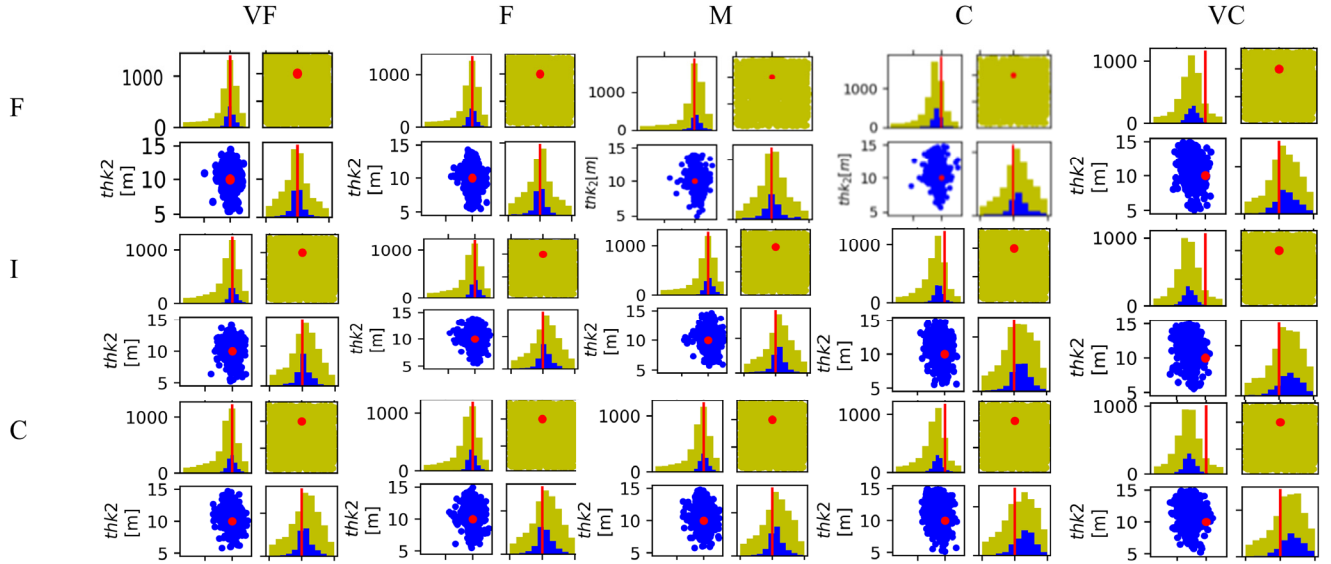


Figure S1. a) Posterior model space visualization with one iteration and threshold (0.135), b) Posterior model space visualization with 4 iterations, the above row is with fine time discretization whereas the other rest of the rows are with intermediate and coarse time discretization. From the left to right with spatial discretization (VF, F, M, C, VC).

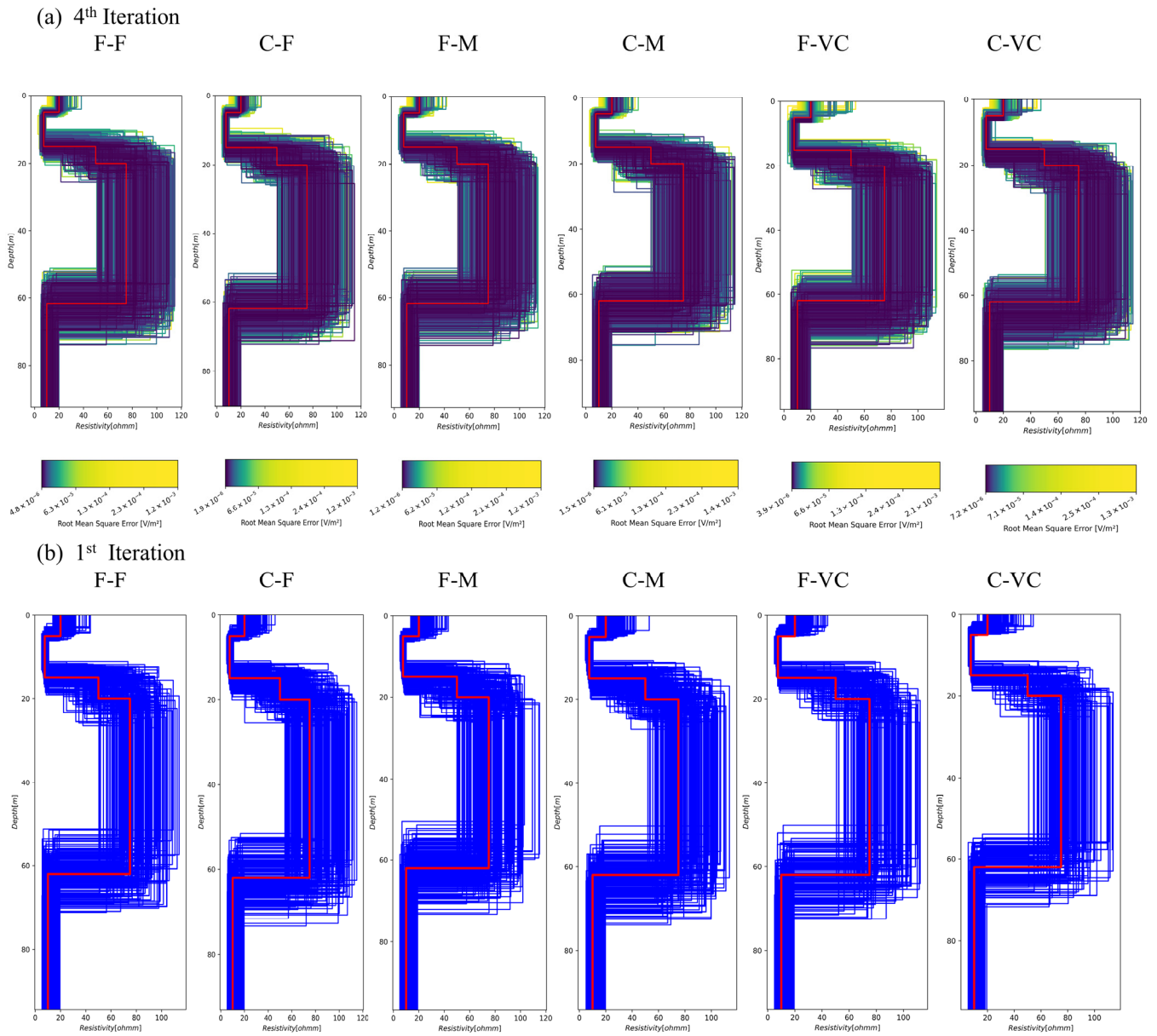


Figure S2. Posterior model visualization w.r.t Depth (m) vs Resistivity (ohm.m), color bar represents the RMSE values, a) with four iteration without threshold and b) with one iteration and a 0.135 threshold value.

The depth-resistivity models are shown in Figure S2. Although more difficult to interpret, they look very identical. The F-F and F-M combinations are nearly identical to the reference, while the C-F and C-M only overestimates slightly the range for the thickness of the first layer. A bias can be recognized in the combinations F-VC and C-VC when comparing the posterior with the reference, in particular at the 15 m depth transition corresponding to an increase in resistivity, and similarly for the transition to the half-space. Similar trend can be observed for the solution after 1 iteration and a threshold of 0.135.