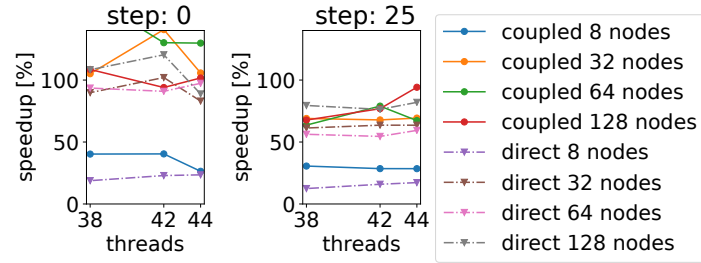


## APPENDIX

For reference, we have included the full range of performed measurements and results below.



Plot of the reached speedup of the simulation due to load balancing in percent.

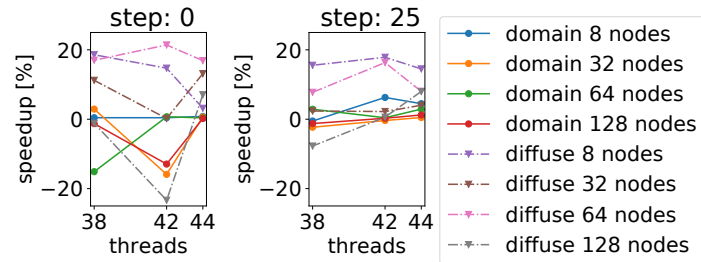
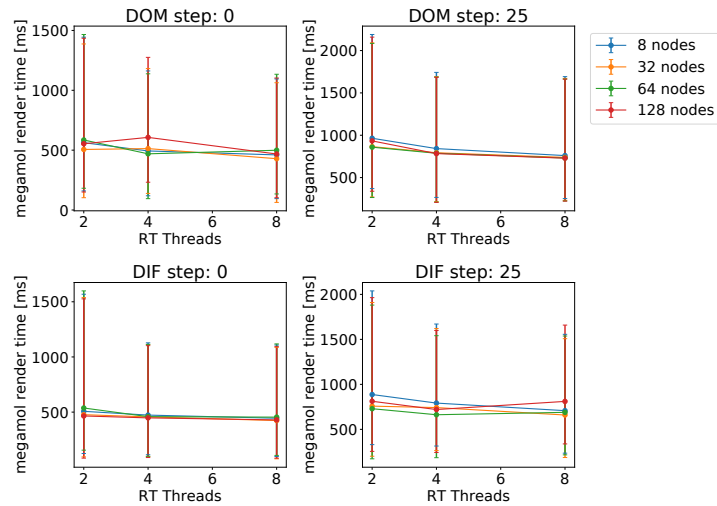
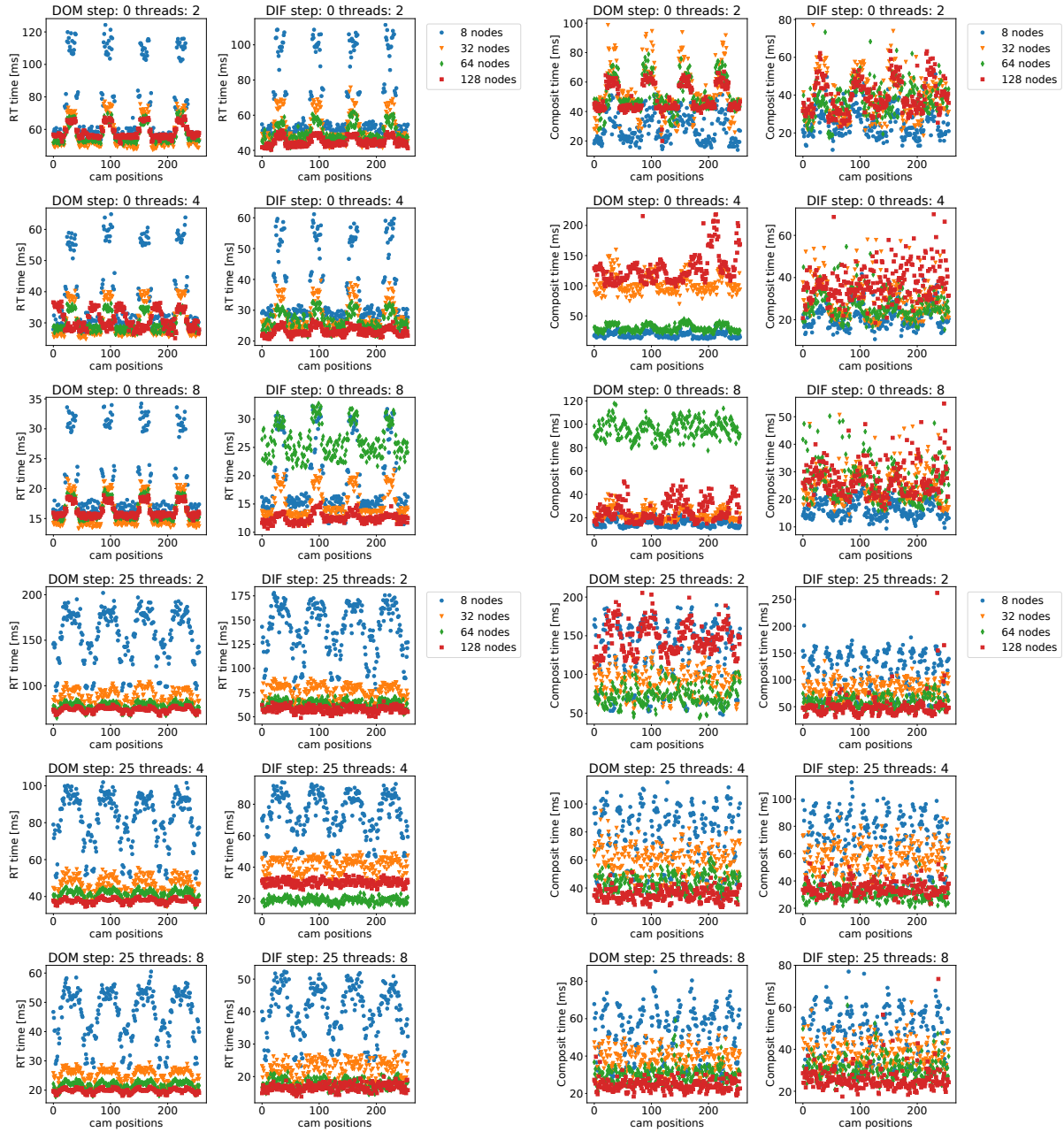


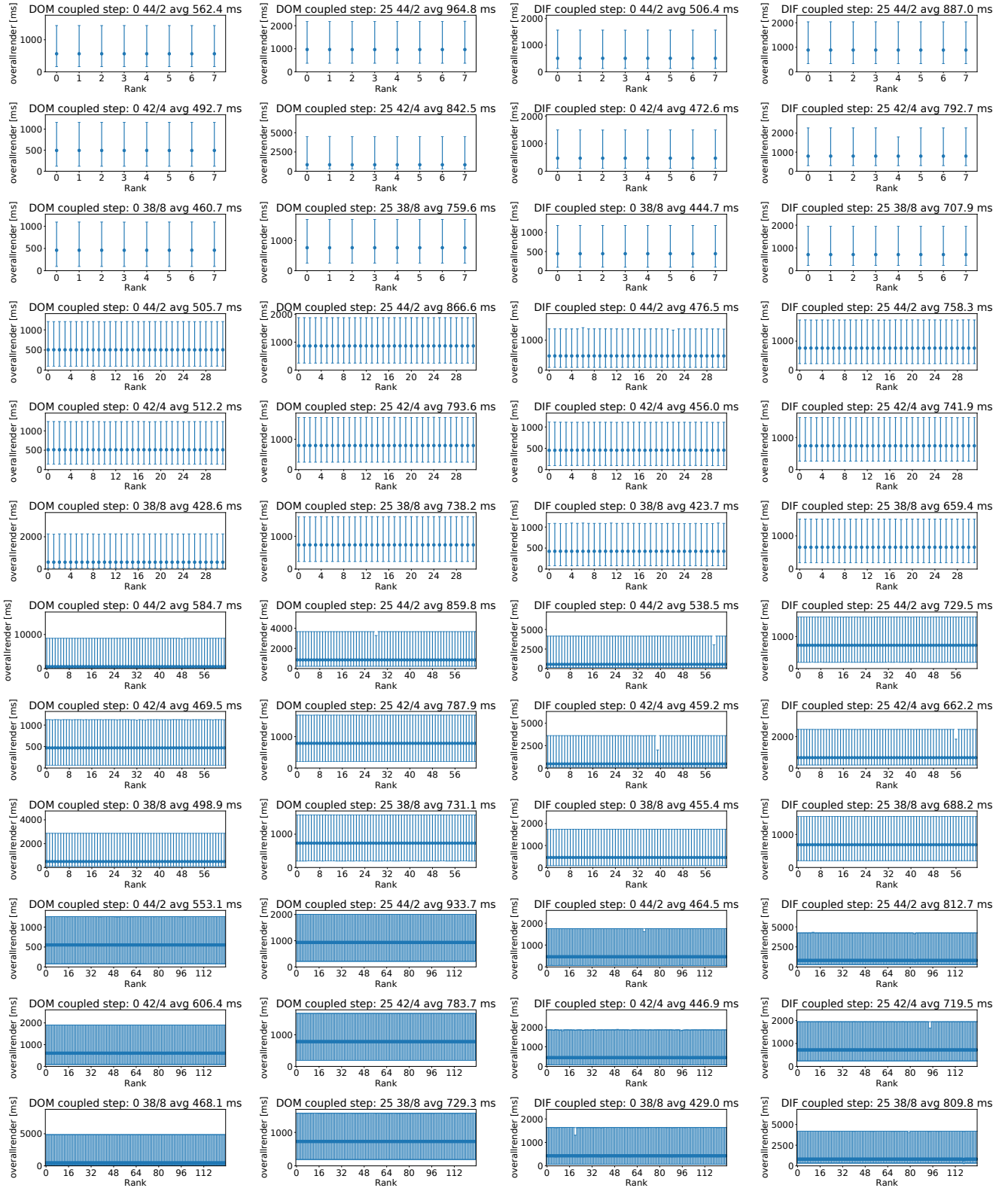
Figure of the relative speedup reached by coupling the simulation with the visualization. For time step 0 the accumulated speedup is 2.5% and for time step 25 the speedup is 4.3%.



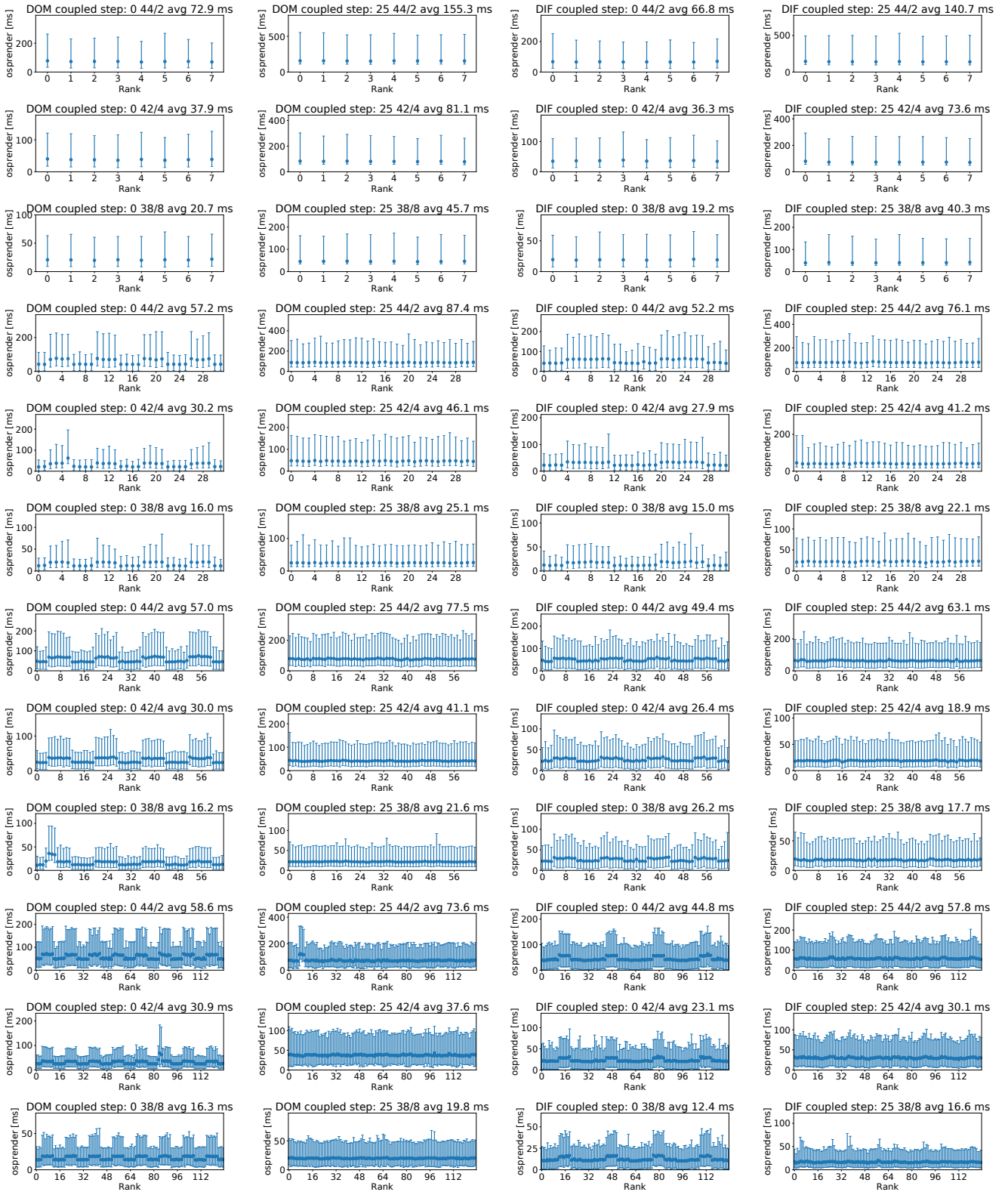
Depiction of the overall time for one visualization step for the two different domain decompositions and the two different iteration steps. Note that at each frame an image is encoded and stored to disk.



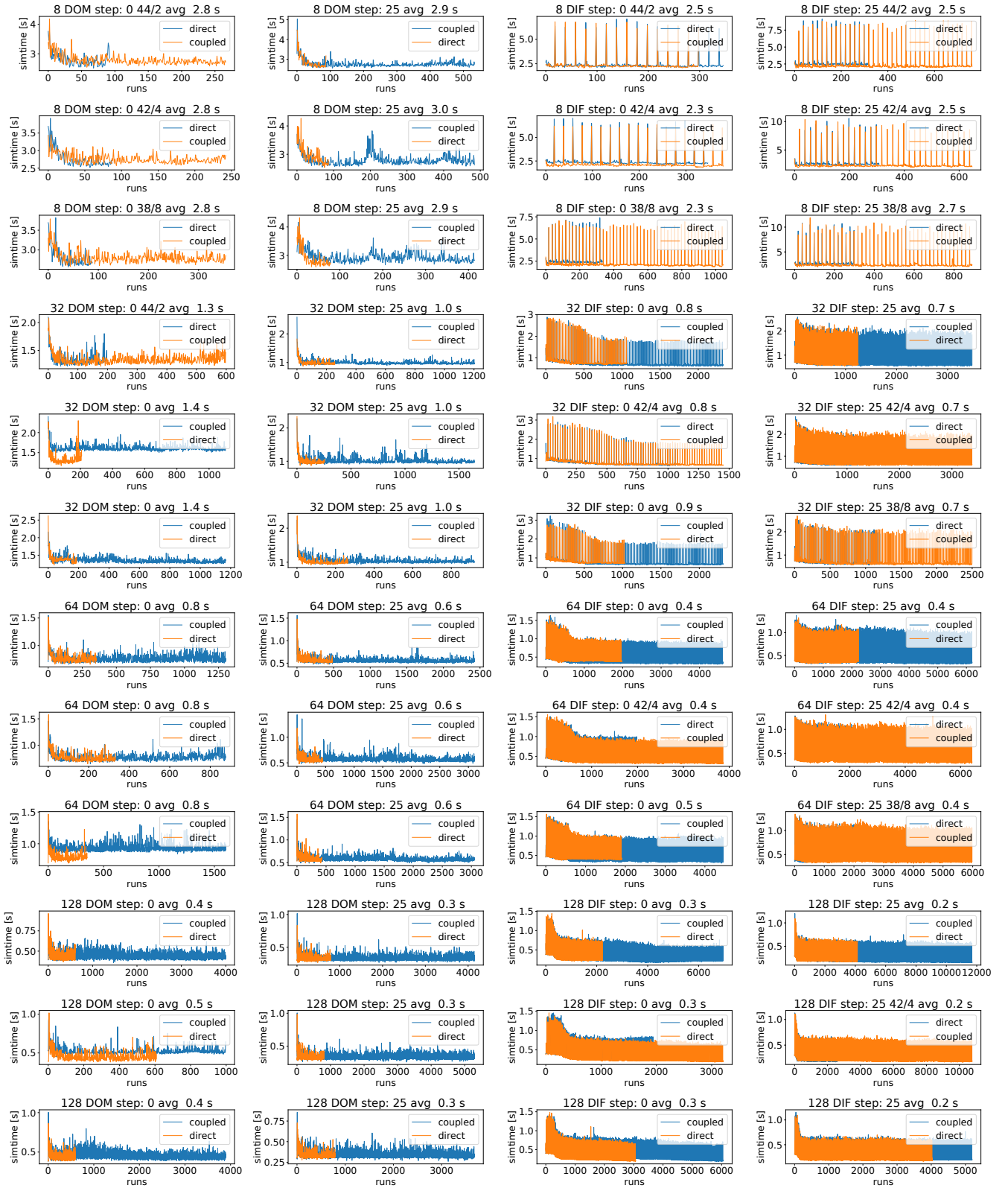
Plots of the ray tracing (left) and compositing (right) times for all used camera configurations.



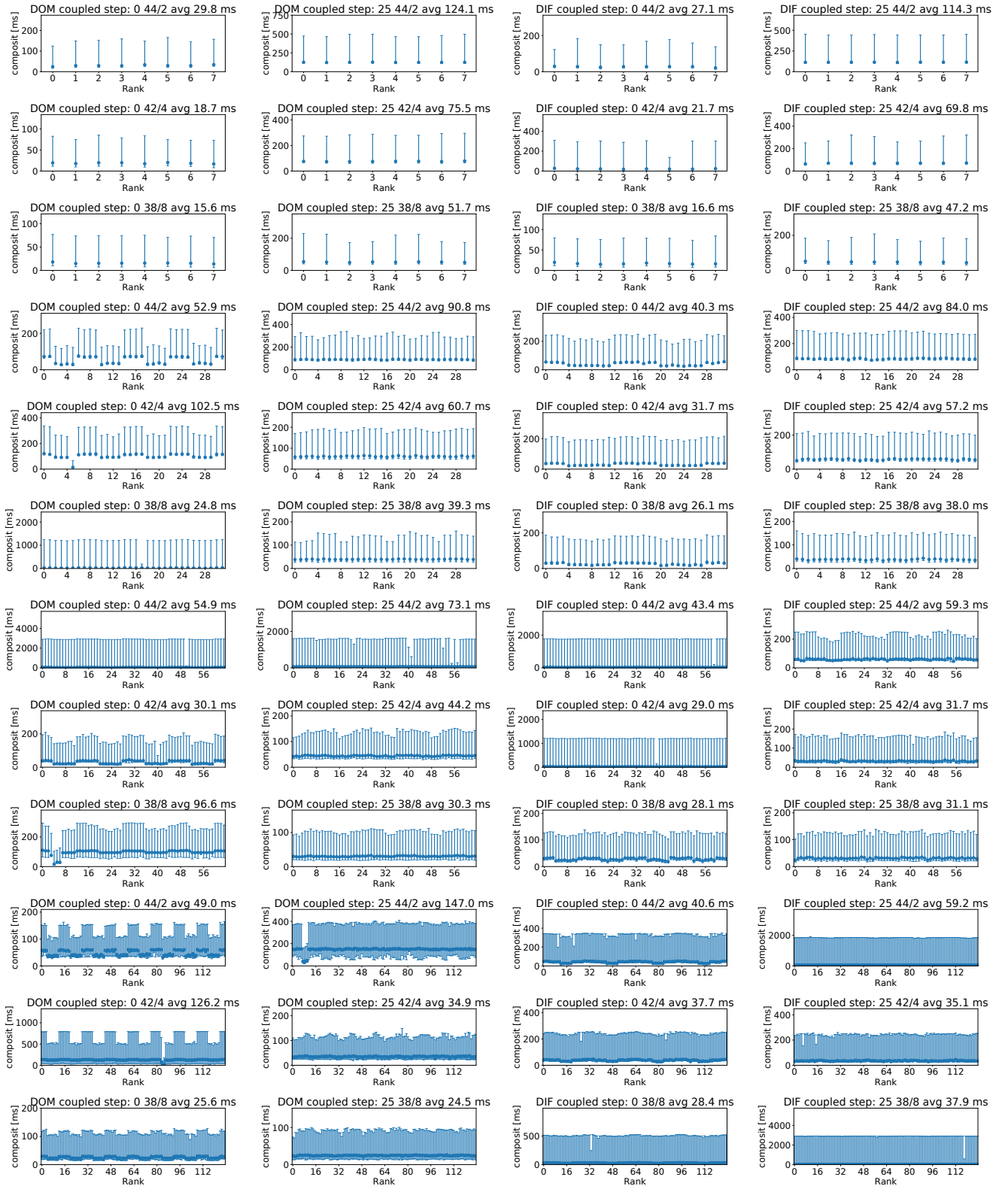
Plots of the overall time of one visualization step for each incorporated rank. Every plot represents a unique configuration of parameters.



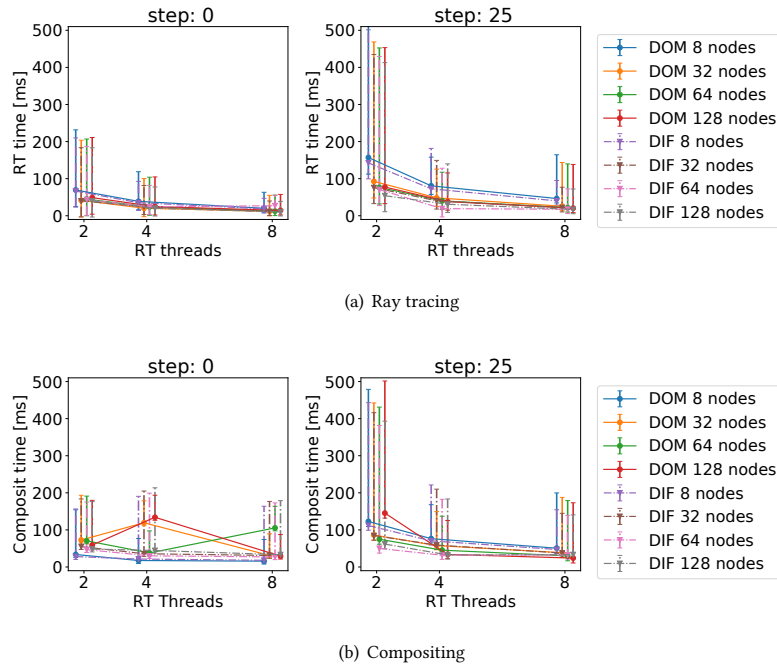
**Graph collection of the ray tracing time for every single rank. Note that especially for step 0 an imbalance of load causes some ranks to use significantly more time for rendering.**



Plots of the simulation time of every configuration for each individual step. The varying length is due to measurements using a fixed time limit. Also, coupled runs should run longer to sample each camera configuration.



Plot of the time the image compositing is using during visualization.



**Figure 7:** Plot (a) shows the ray tracing performance over the amount of assigned threads. Graph (b) represents the same measurement this time for the duration of the compositor. As a representation we chose the median as value and the 10 % decile and 90 % decile as error bar.