

Additional Plots for “Star-Struck by Fixed Embeddings: Modern Crossing Number Heuristics”

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April 28, 2022

For each instance set, this document contains three additional figures with plots for all algorithms:

1. One showing the solution quality in terms of the number of crossings relative to BEST.
2. One showing the same as the first plot but with large values cut off. This helps to discern plots with lower values more easily.
3. One showing the running time.

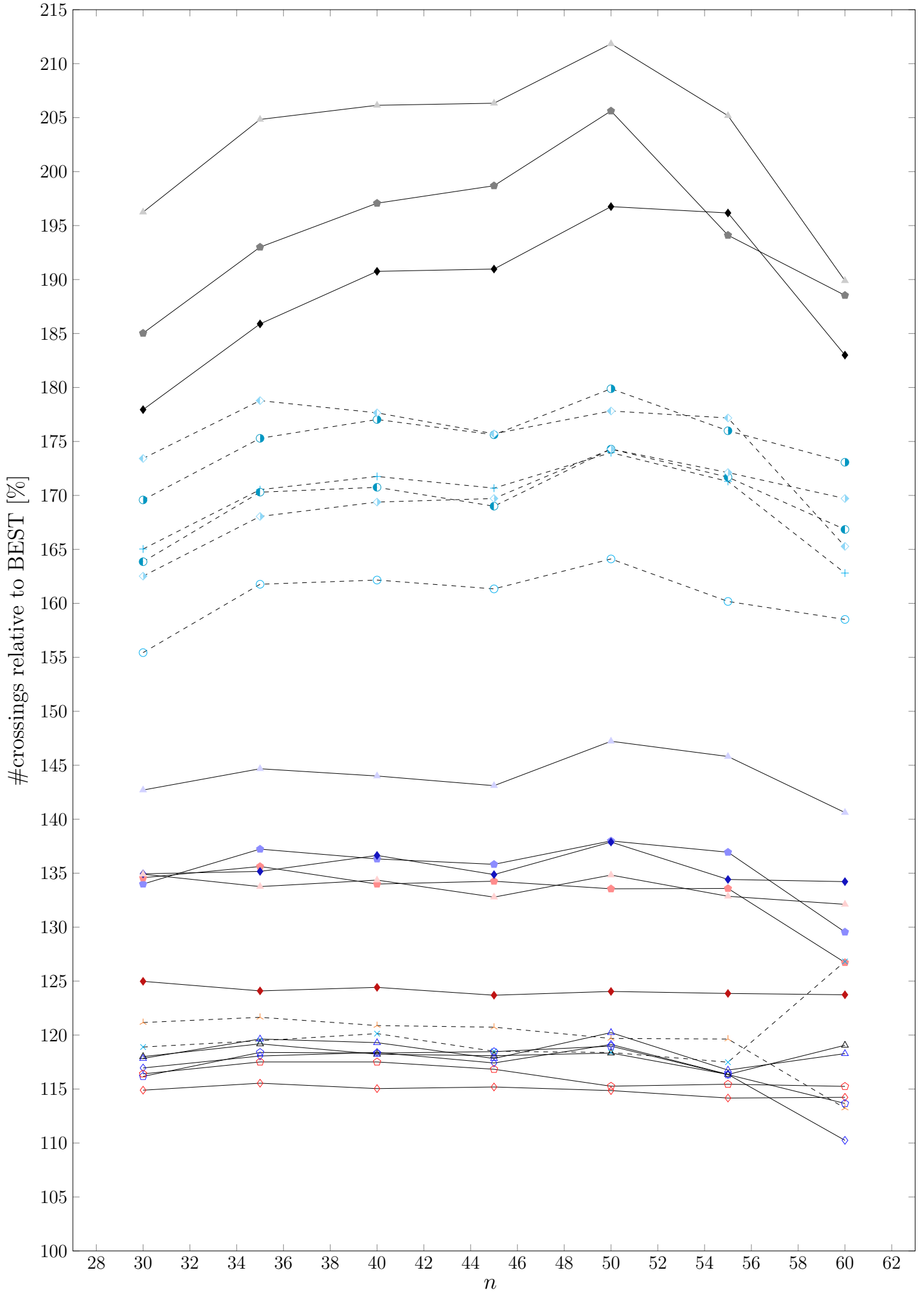
The legend for the plots is given below on this page. There are some irregularities in the plots for some instance sets and algorithms. These stem from the fact that some instances could not be solved with certain algorithms due to the enforced memory limit. In particular, this concerns:

- The EXPANDERS with $(|V(G)|, \delta) = (50, 20)$ with respect to *fix-inc*.
- The EXPANDERS with $(|V(G)|, \delta) = (100, 20)$ with respect to all heuristics involving *inc*.
- The ISCAS85 instances c3540, c5315, and c7552 with respect to *fix-inc*, *multi-inc* and *multi-inc-srm*.
- The ISCAS85 instance with respect to *ccm-srm*.
- The ISCAS89 instances s820 and s832 with respect to *fix-inc*.
- The ITC99 instance b05s with respect to *fix-inc*.
- All COMPLETE and COMPLETEBIPARTITE instances with respect to algorithms involving *inc*, *var-all-srm*, and *multi-all-srm*.

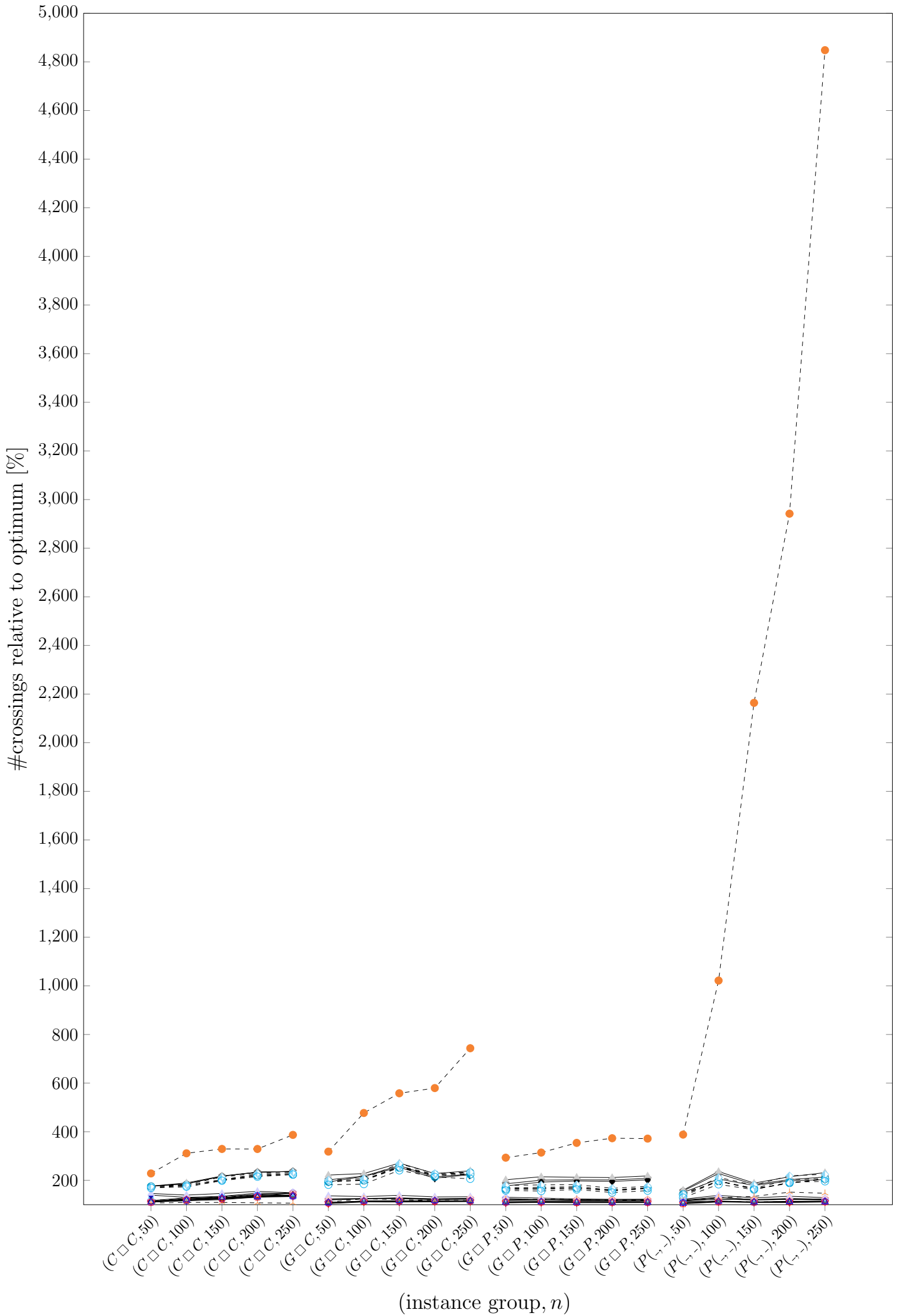
Also note that the running times for *mim-high_F* on b02 and b01 as well as *mim-low_F* on b01 are not shown on the logarithmic axis as their value is less than a millisecond (and hence rounded down to 0ms).

—▲— <i>fix-none</i>	—▲— <i>fix-all</i>	—▲— <i>fix-inc</i>
—■— <i>multi-none</i>	—■— <i>multi-all</i>	—■— <i>multi-inc</i>
—◆— <i>var-none</i>	—◆— <i>var-all</i>	—◆— <i>var-inc</i>
—+— <i>mim-random</i>	—●— <i>mim-high_G</i>	—◇— <i>mim-high_F</i>
—⊖— <i>mim-both</i>	—●— <i>mim-low_G</i>	—◇— <i>mim-low_F</i>
—●— <i>ccm</i>	—✦— <i>ccm-srm</i>	—✦— <i>mim-srm</i>
—△— <i>fix-all-srm</i>	—△— <i>multi-all-srm</i>	—△— <i>var-all-srm</i>
—△— <i>fix-none-srm</i>	—△— <i>multi-inc-srm</i>	—△— <i>var-inc-srm</i>

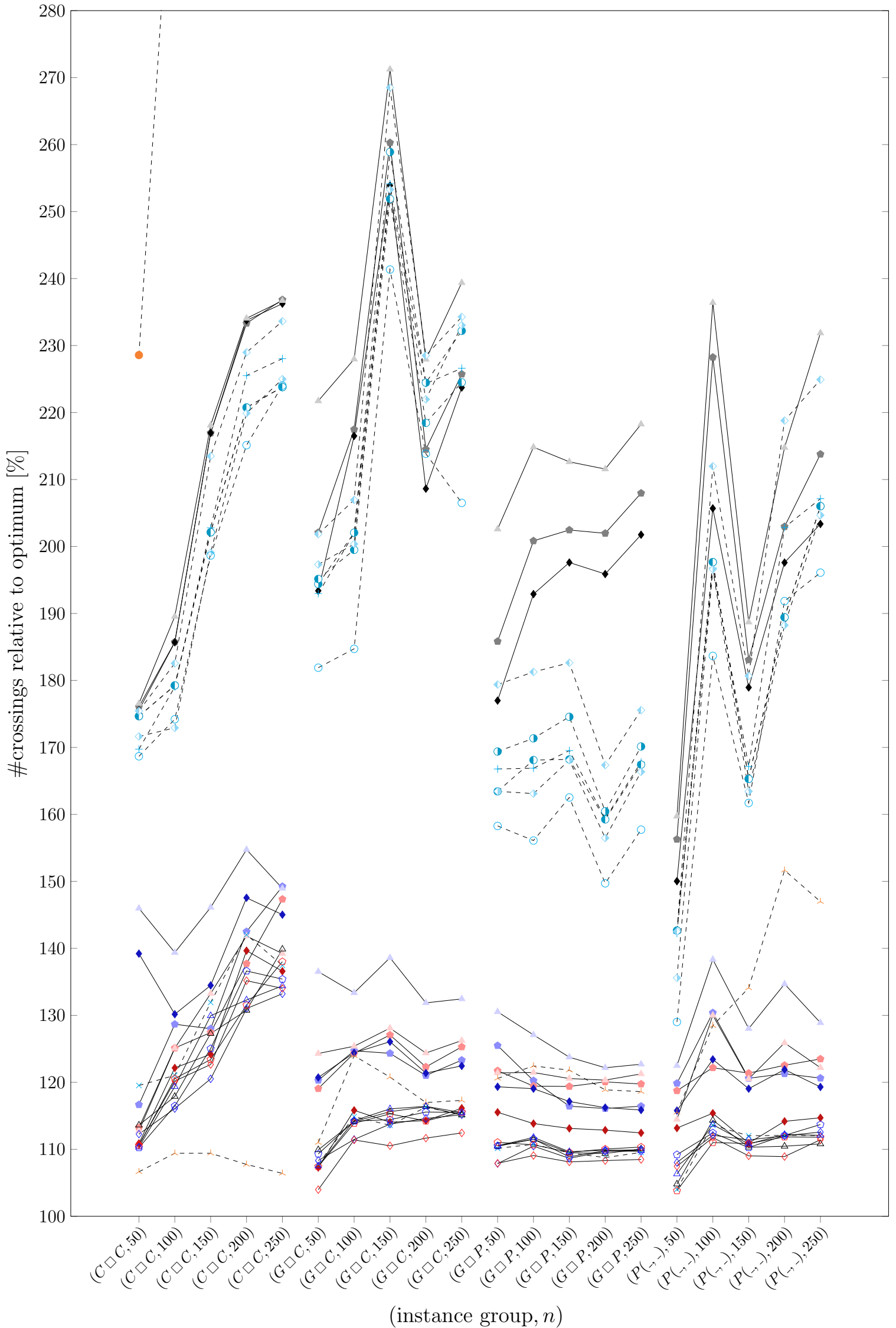
2 ROME: Solution Quality (Large Values Cut Off)



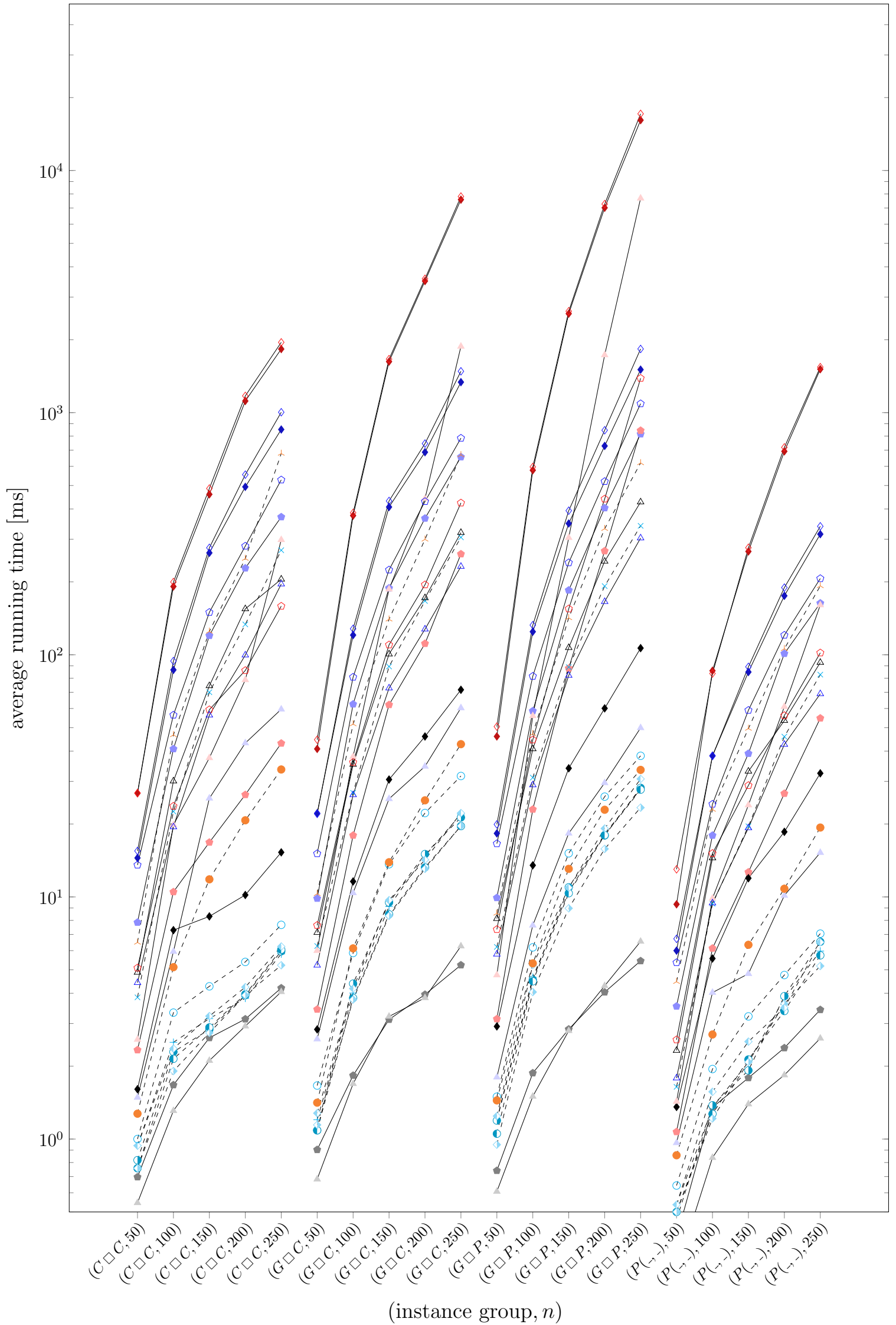
7 KNOWNCR: Solution Quality



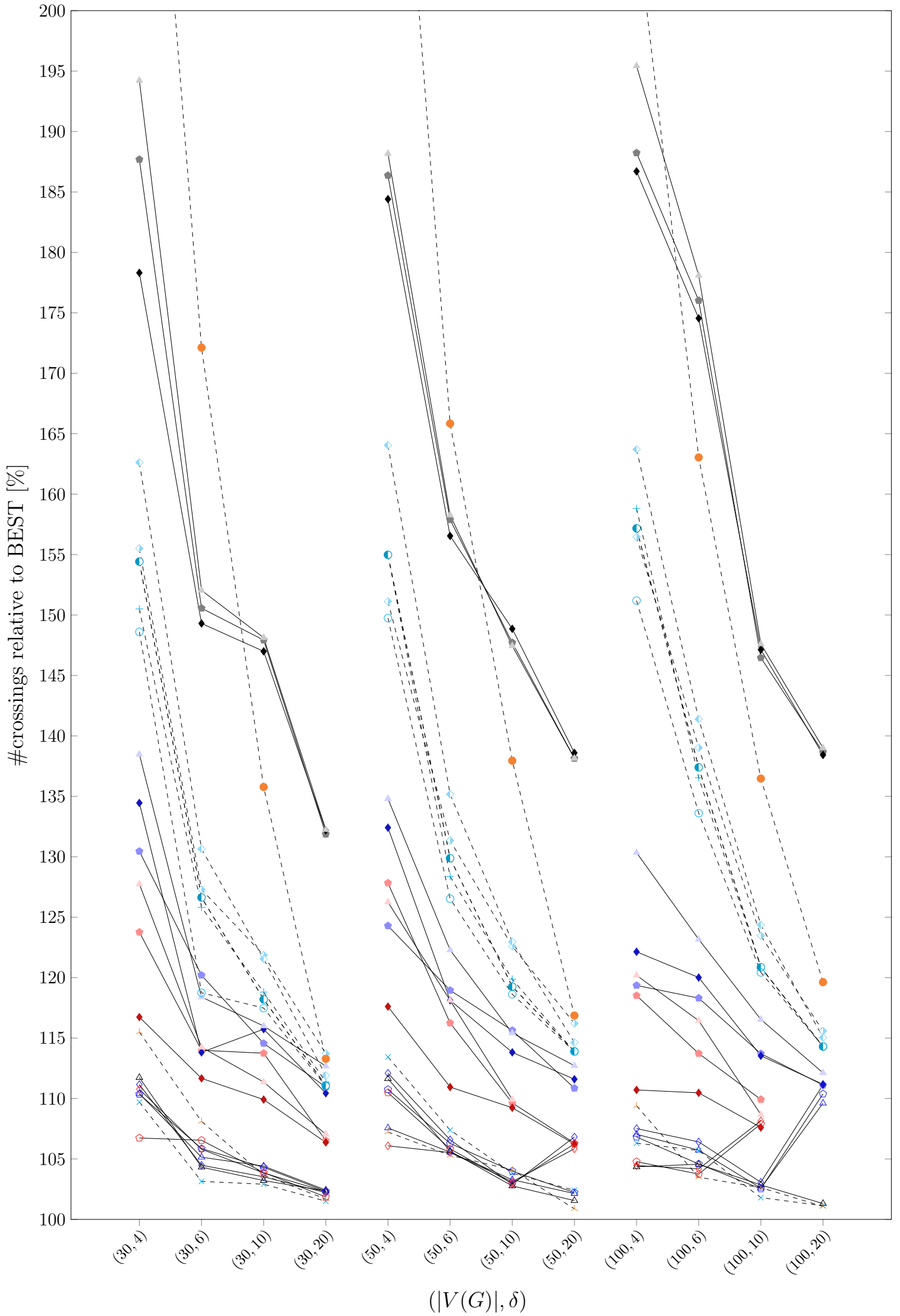
8 KNOWNCR: Solution Quality (Large Values Cut Off)



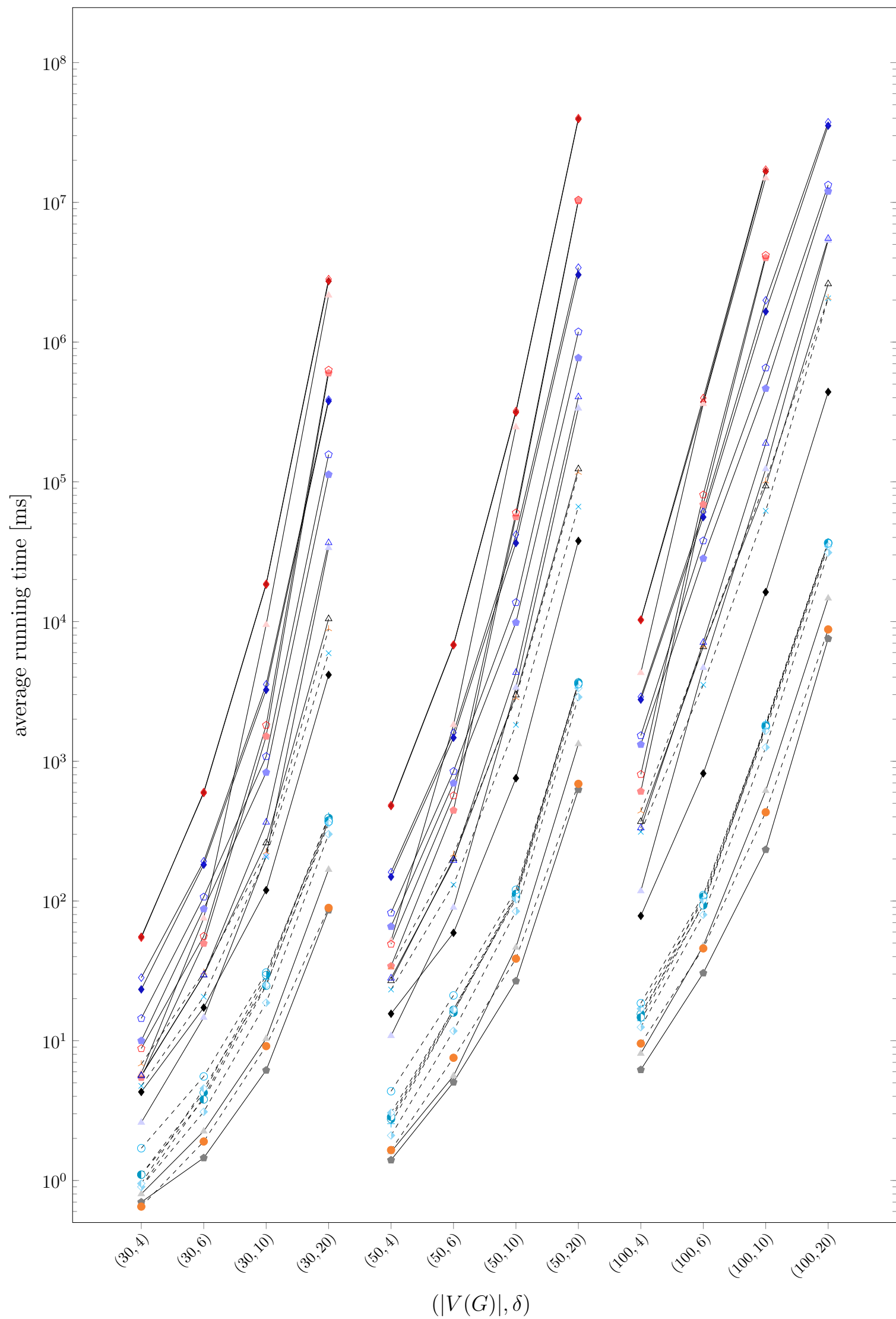
9 KNOWNCR: Running Time



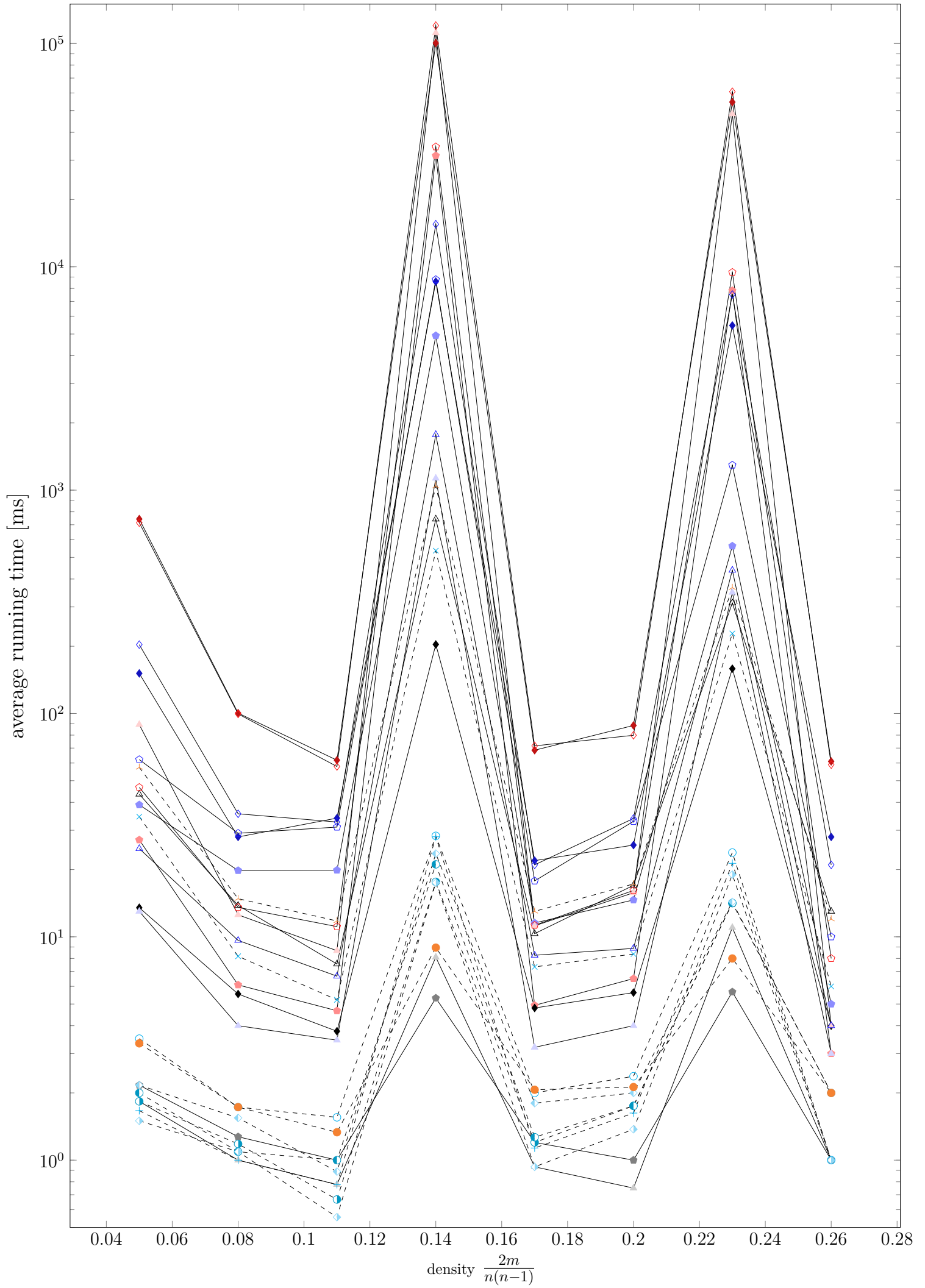
11 EXPANDERS: Solution Quality (Large Values Cut Off)



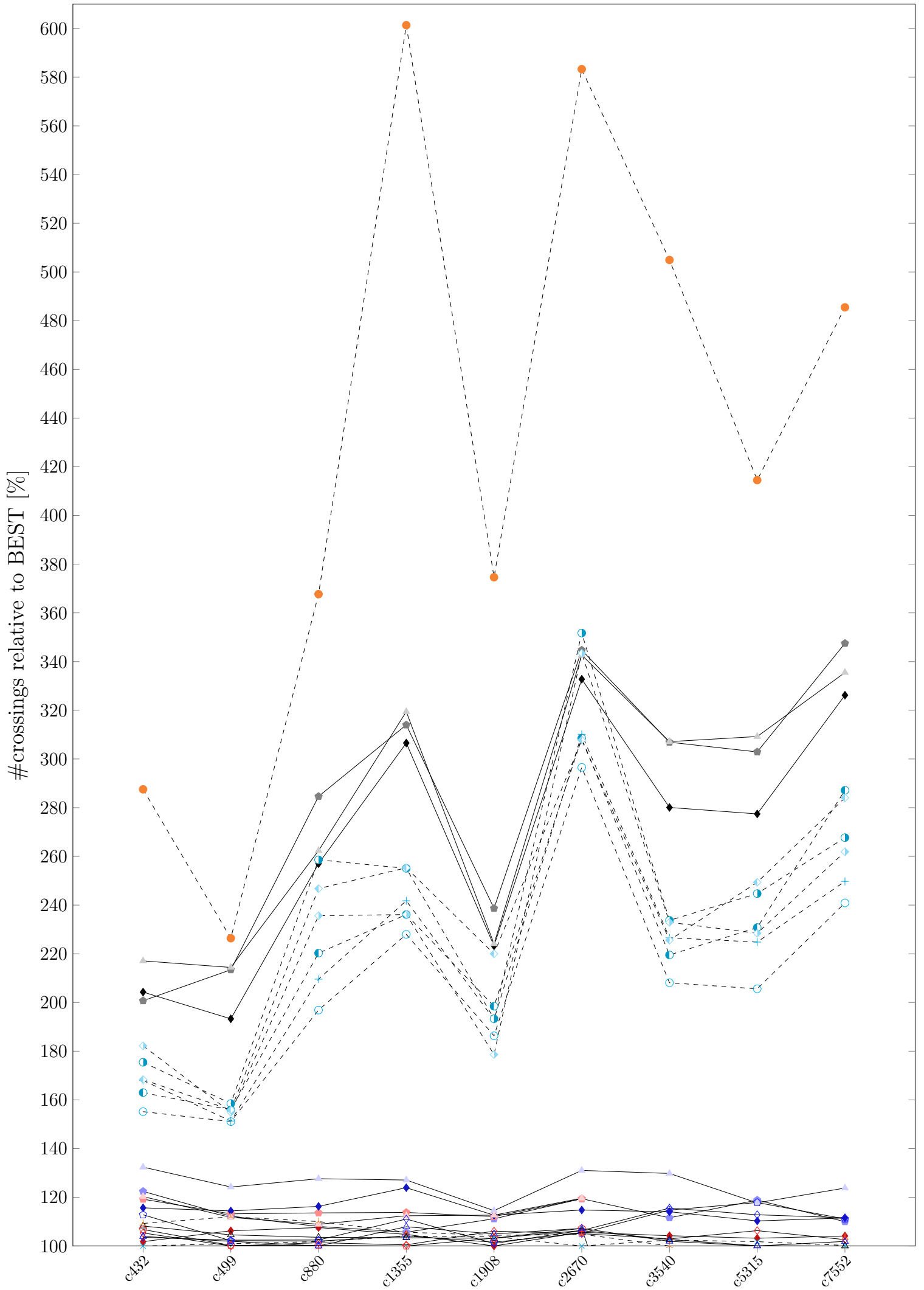
12 EXPANDERS: Running Time



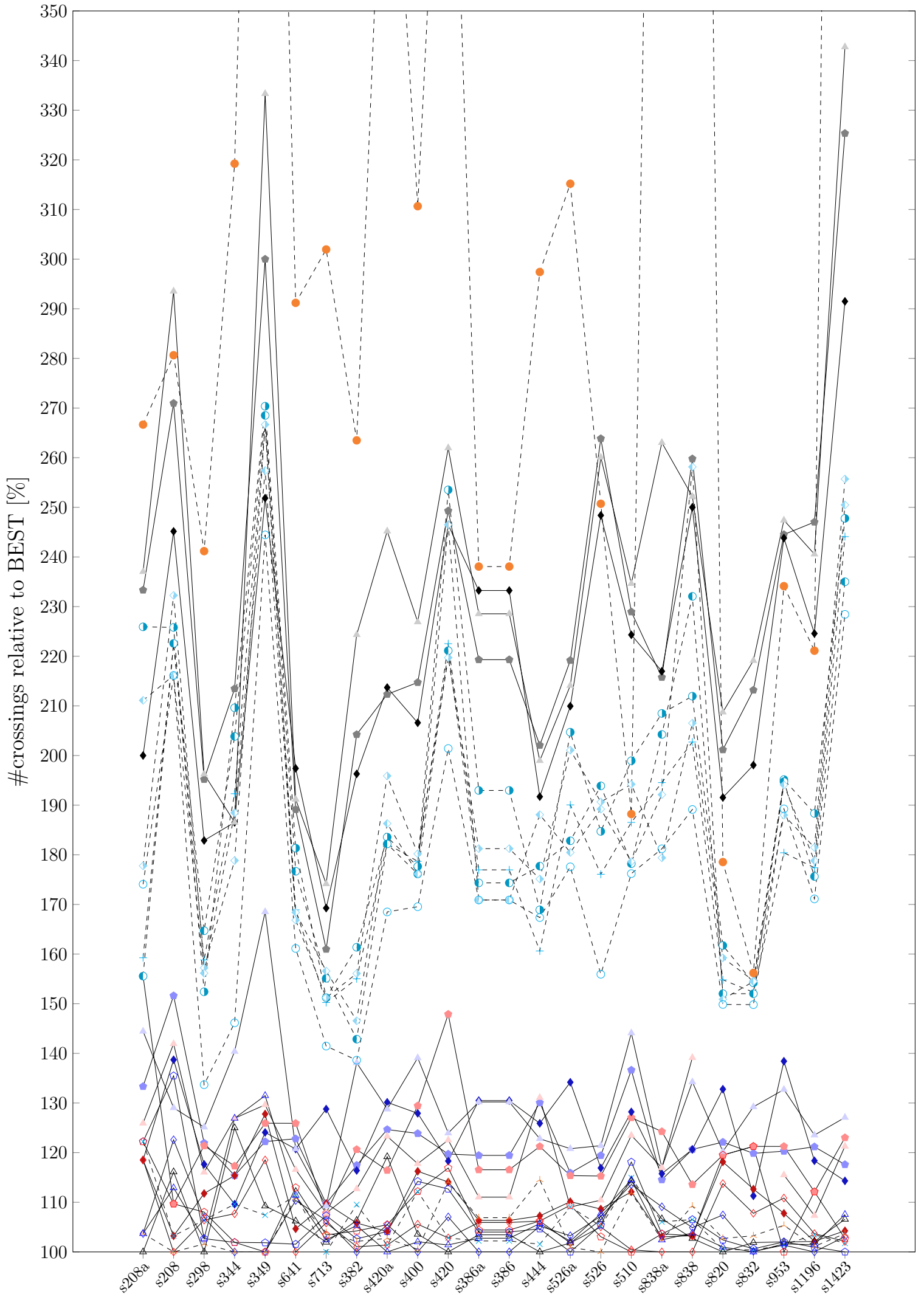
15 WEBCOMPUTE: Running Time



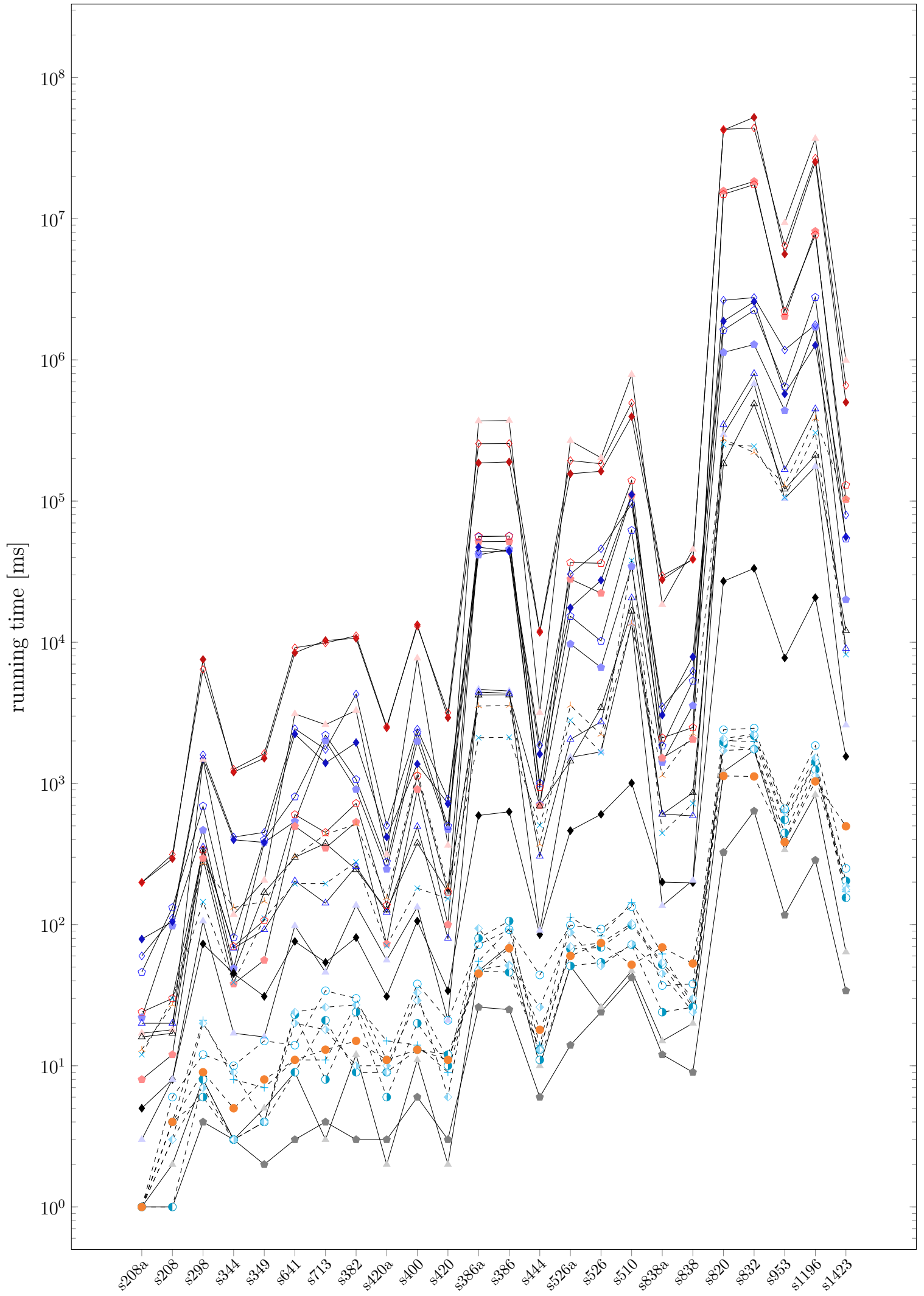
16 ISCAS85: Solution Quality



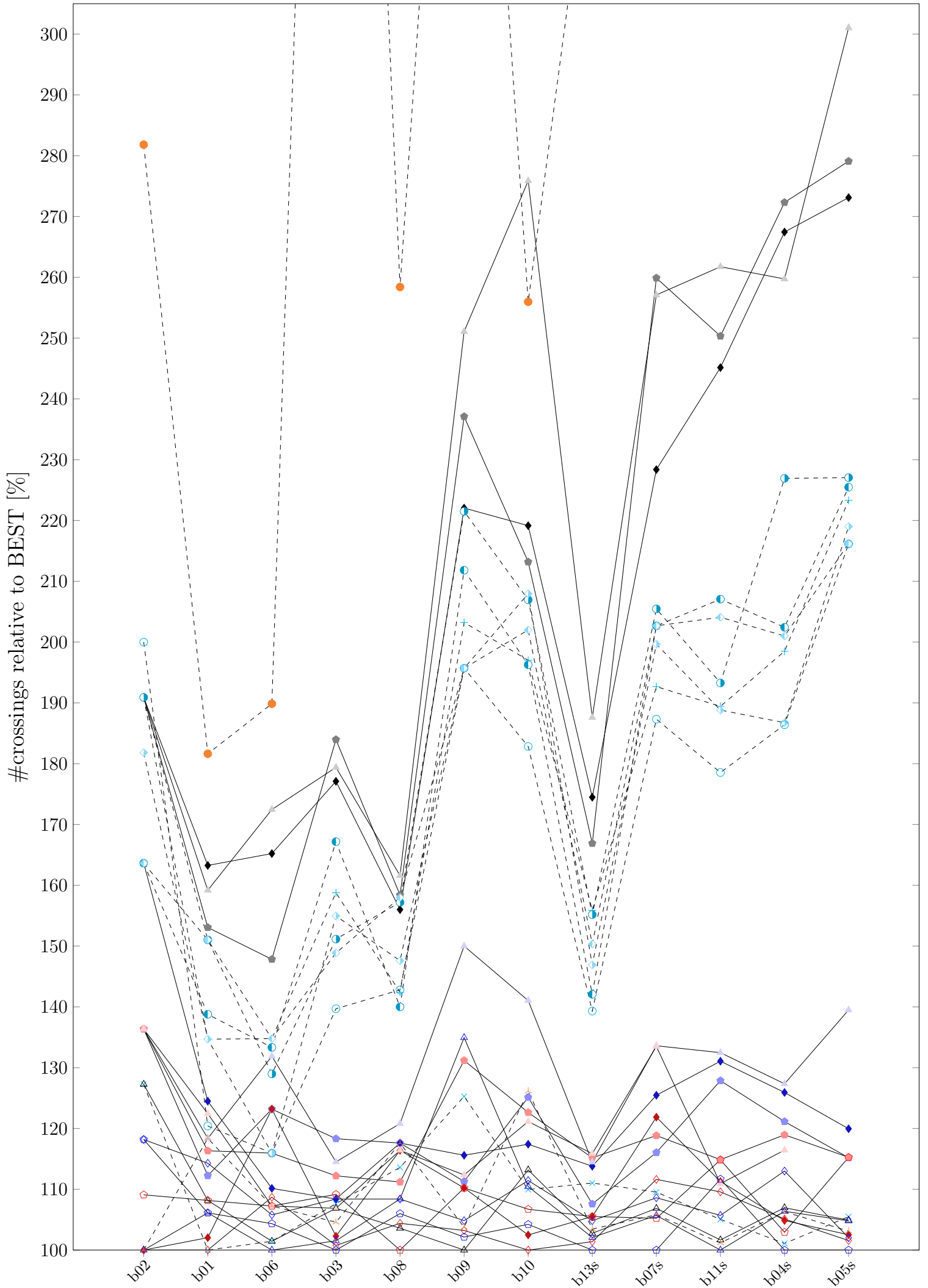
20 ISCAS89: Solution Quality (Large Values Cut Off)



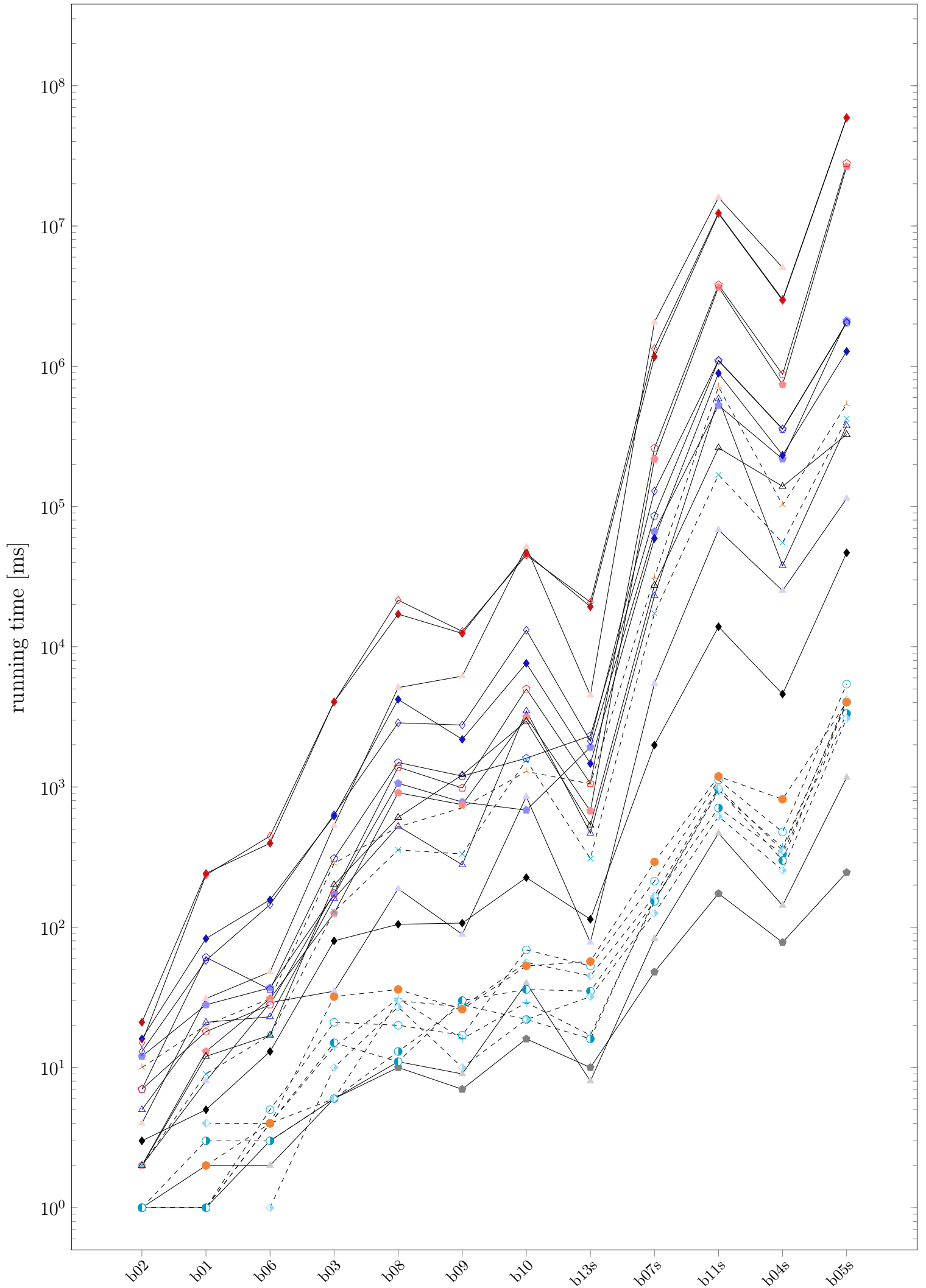
21 ISCAS89: Running Time



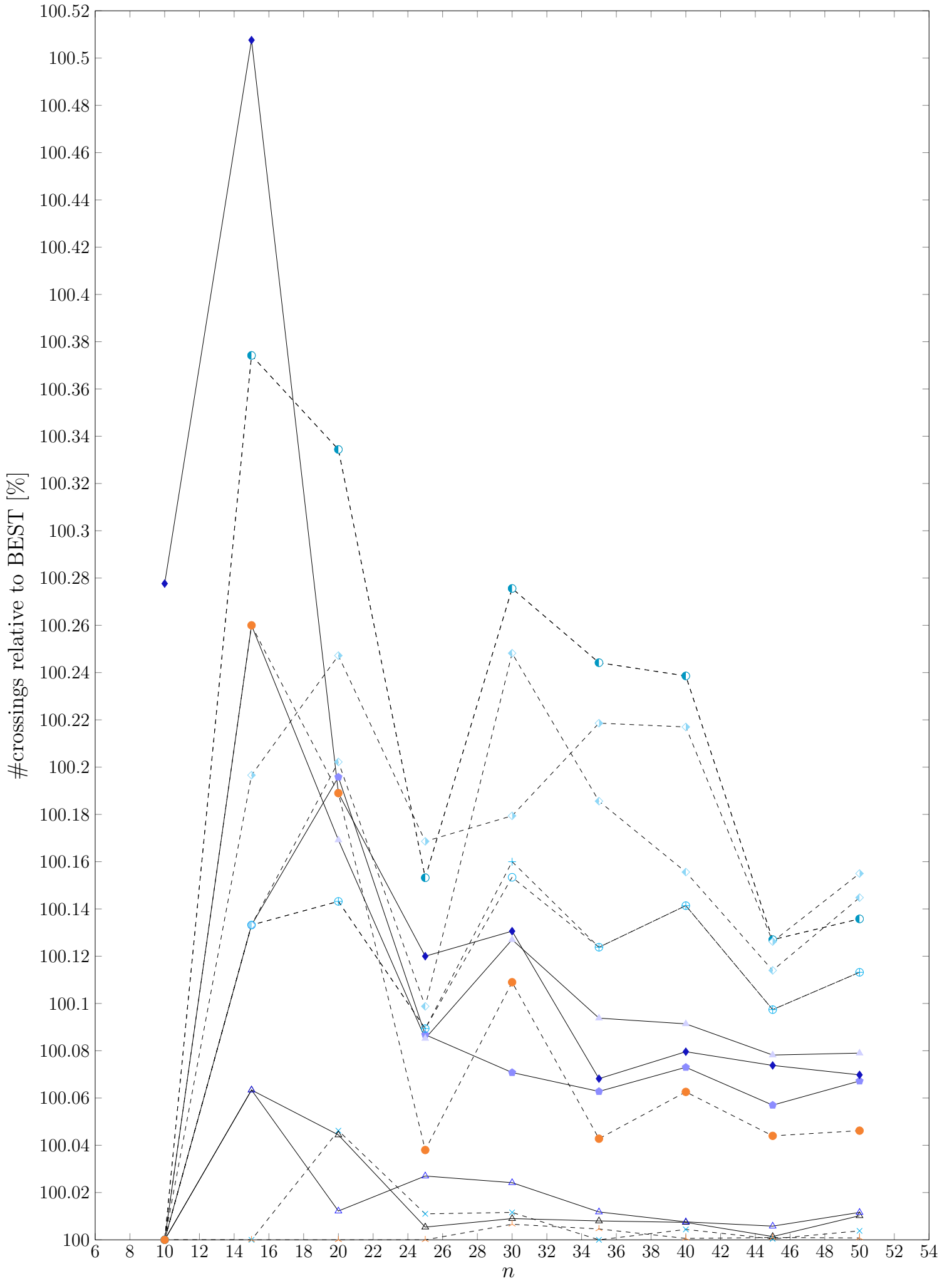
23 ITC99: Solution Quality (Large Values Cut Off)



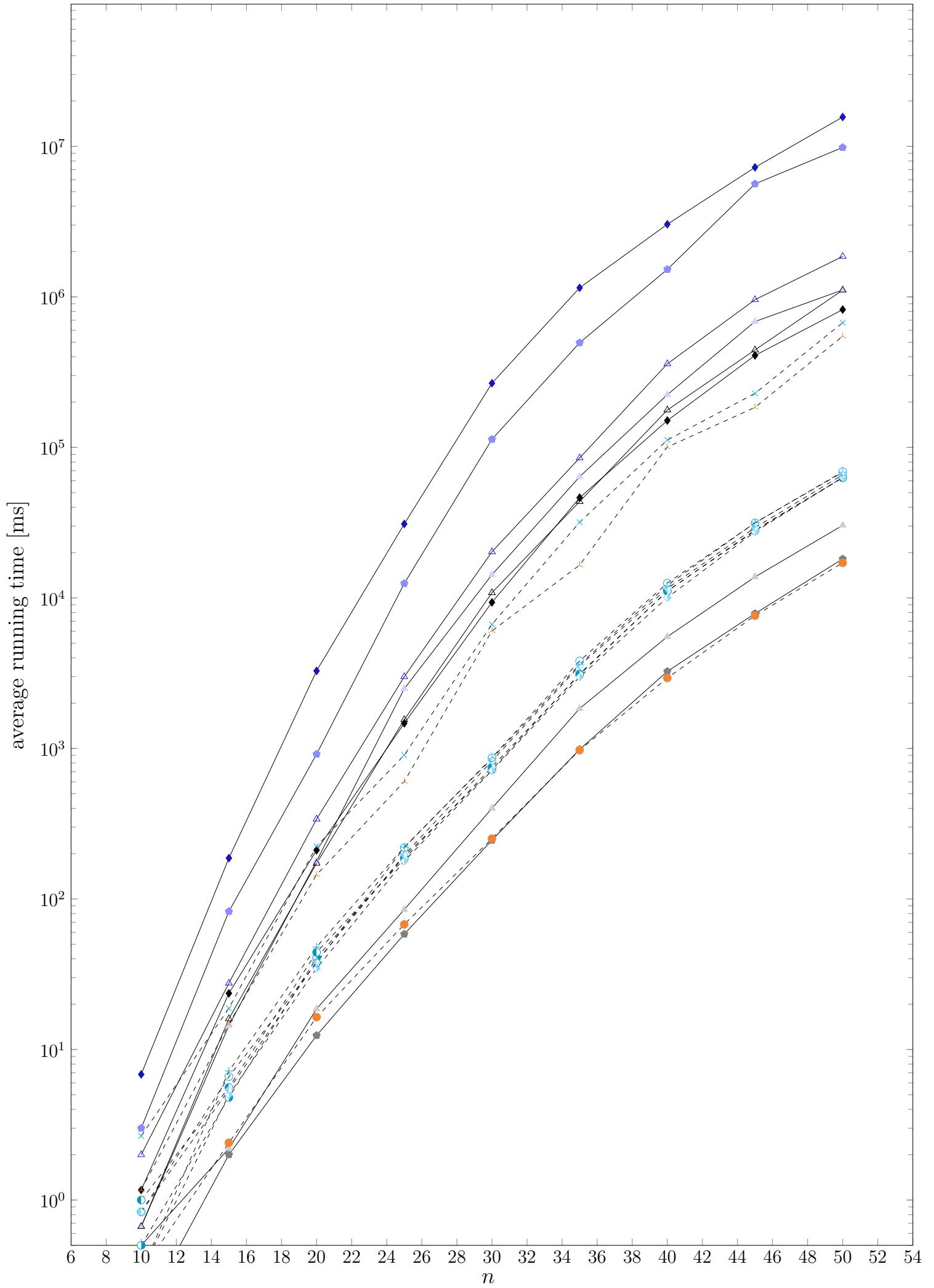
24 ITC99: Running Time



26 COMPLETE: Solution Quality (Large Values Cut Off)



27 COMPLETE: Running Time



28 COMPLETEBIPARTITE: Solution Quality

