

Supplementary Document of “Empirical Investigation of Reference Point Based Methods When Facing Massively Large Number of Objectives”

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1 Visual Comparisons Among MOEA/D, NSGA-III and R-NSGA-II

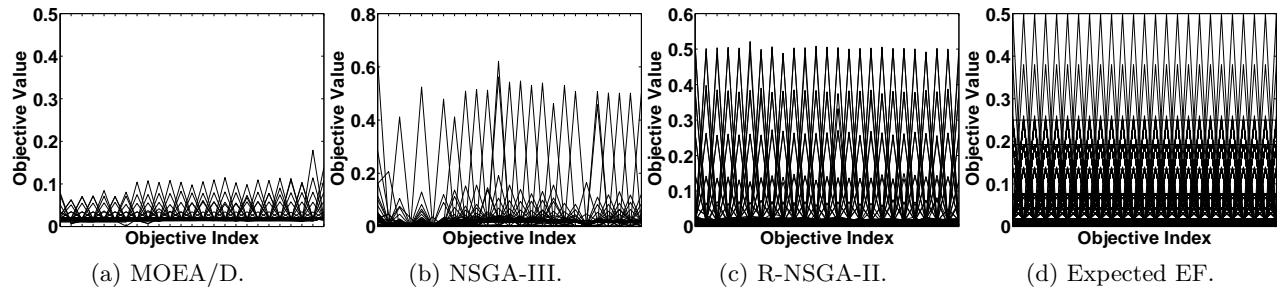


Figure 1: Parallel coordinate plots of different algorithms on 25-objective DTLZ1 problem.

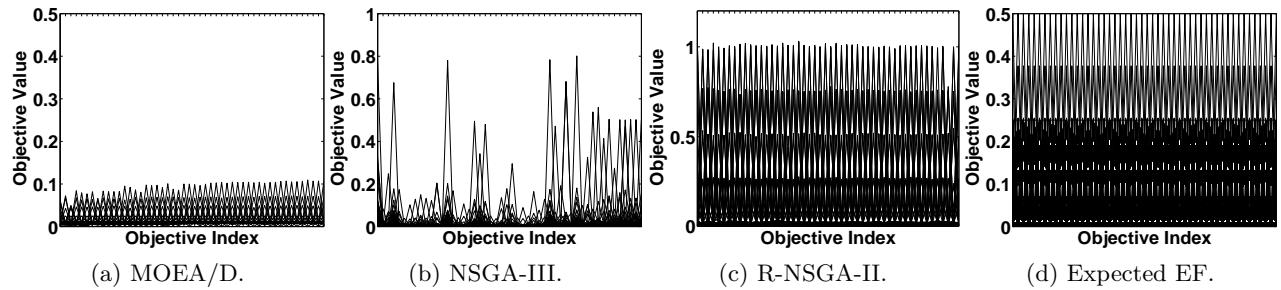


Figure 2: Parallel coordinate plots of different algorithms on 50-objective DTLZ1 problem.

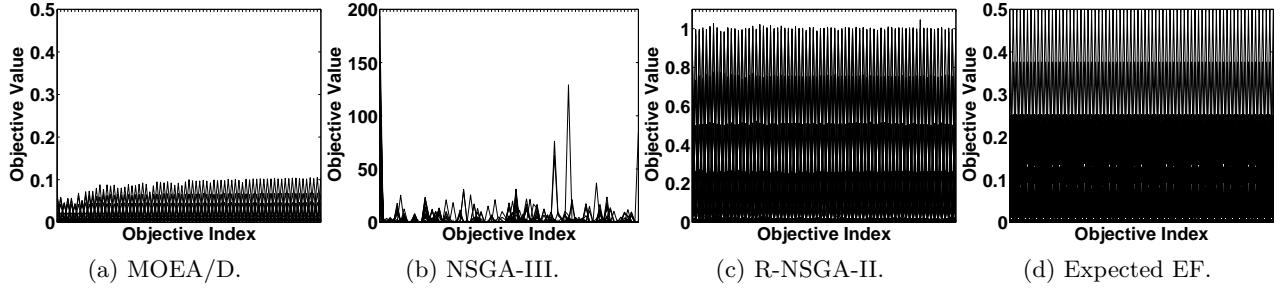


Figure 3: Parallel coordinate plots of different algorithms on 75-objective DTLZ1 problem.

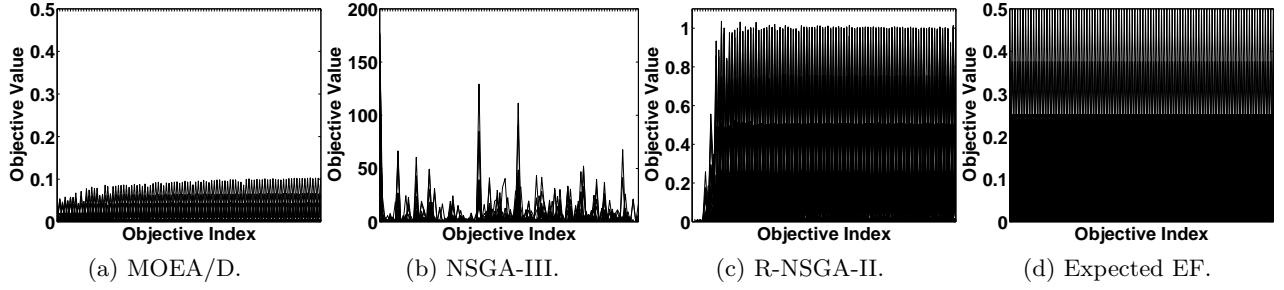


Figure 4: Parallel coordinate plots of different algorithms on 100-objective DTLZ1 problem.

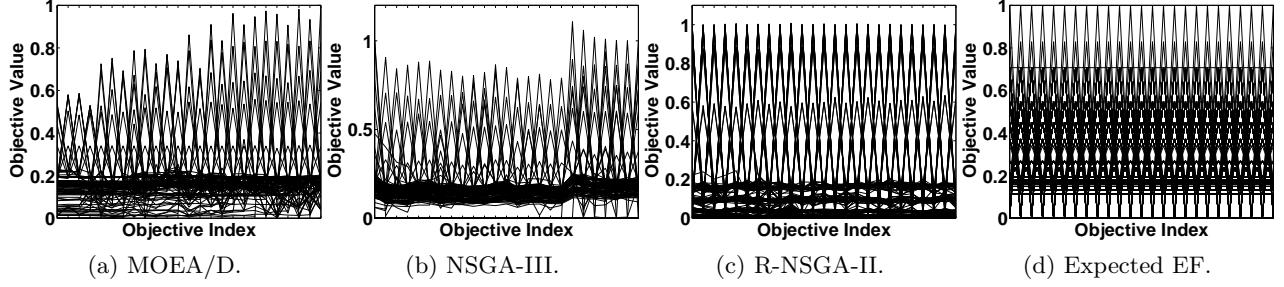


Figure 5: Parallel coordinate plots of different algorithms on 25-objective DTLZ2 problem.

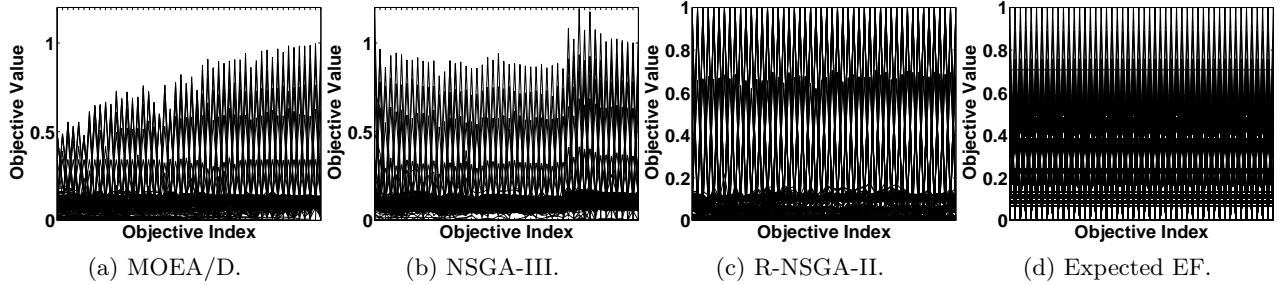


Figure 6: Parallel coordinate plots of different algorithms on 50-objective DTLZ2 problem.

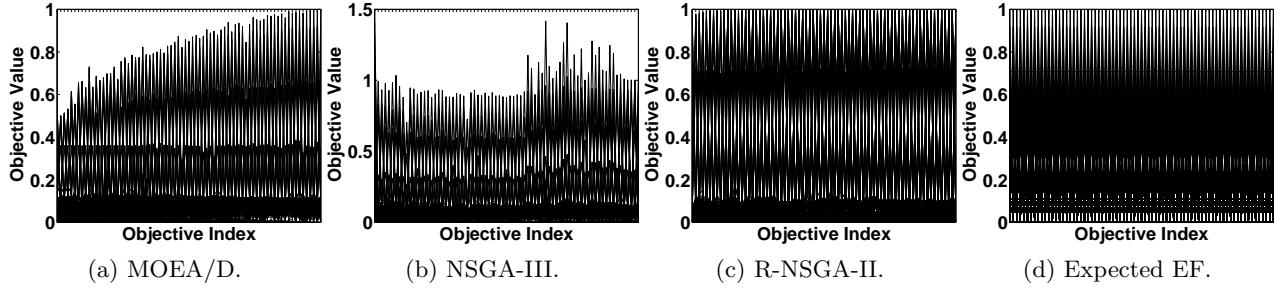


Figure 7: Parallel coordinate plots of different algorithms on 75-objective DTLZ2 problem.

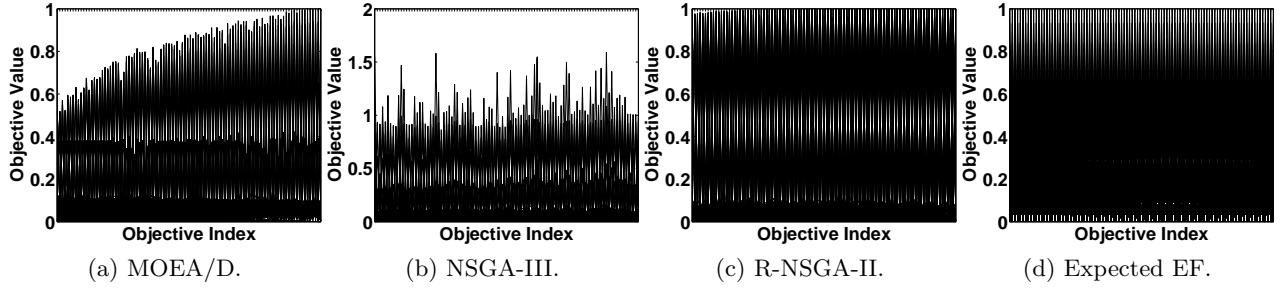


Figure 8: Parallel coordinate plots of different algorithms on 100-objective DTLZ2 problem.

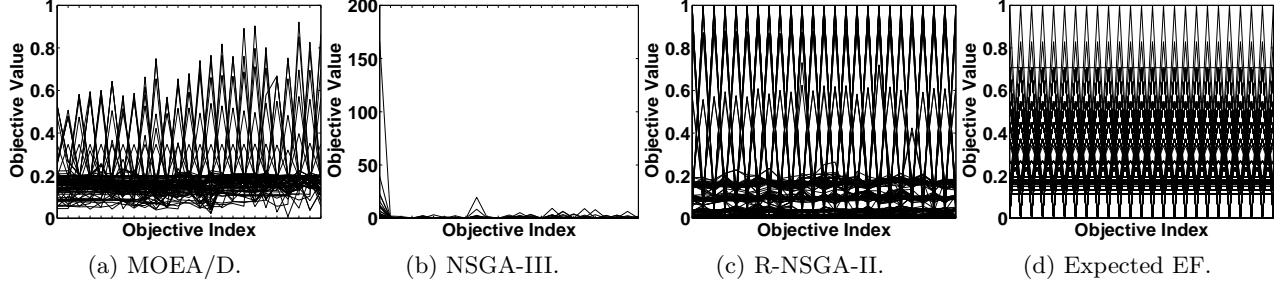


Figure 9: Parallel coordinate plots of different algorithms on 25-objective DTLZ3 problem.

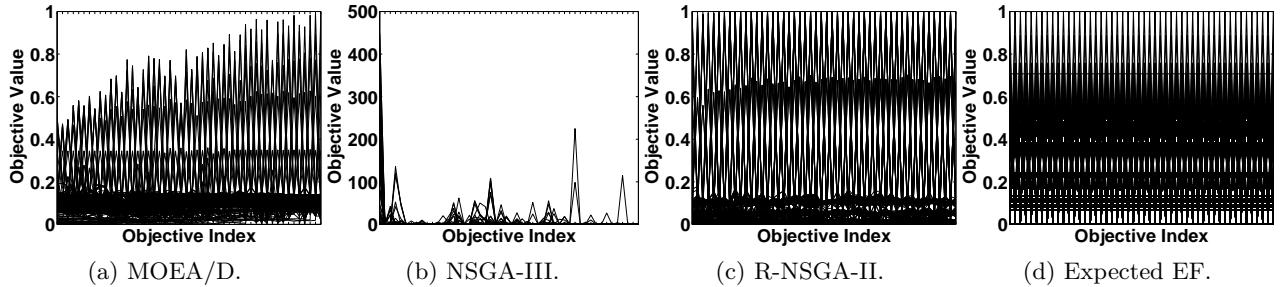


Figure 10: Parallel coordinate plots of different algorithms on 50-objective DTLZ3 problem.

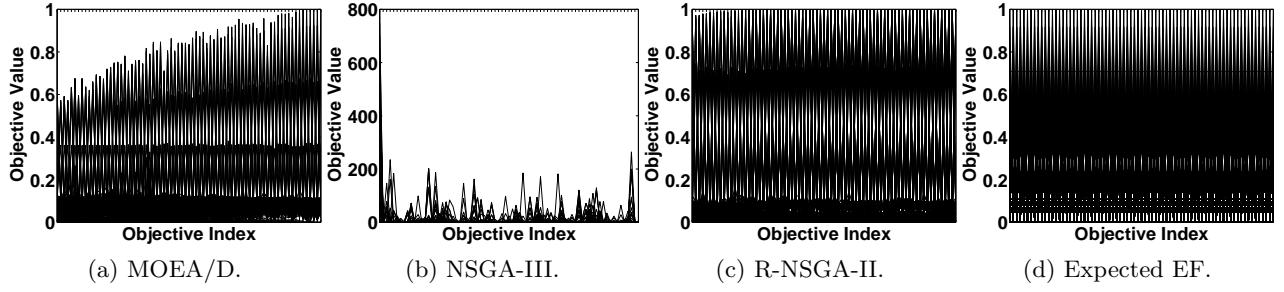


Figure 11: Parallel coordinate plots of different algorithms on 75-objective DTLZ3 problem.

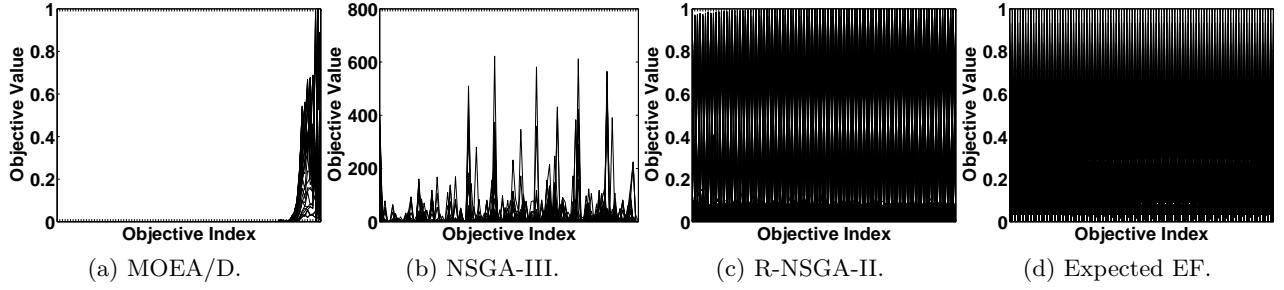


Figure 12: Parallel coordinate plots of different algorithms on 100-objective DTLZ3 problem.

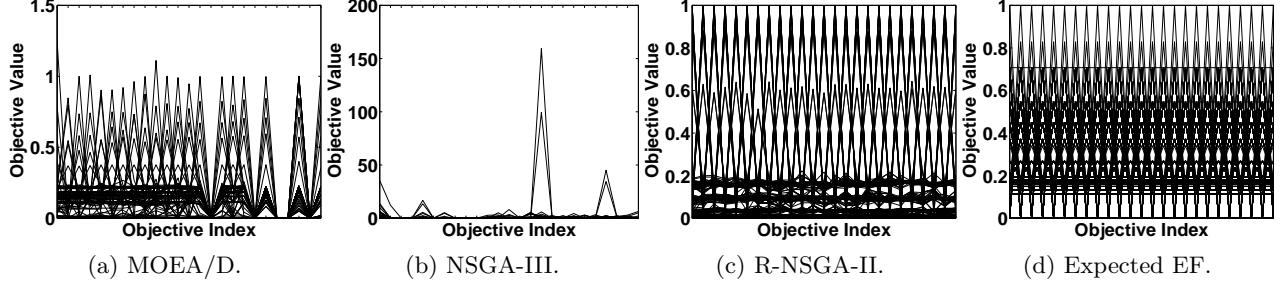


Figure 13: Parallel coordinate plots of different algorithms on 25-objective DTLZ4 problem.

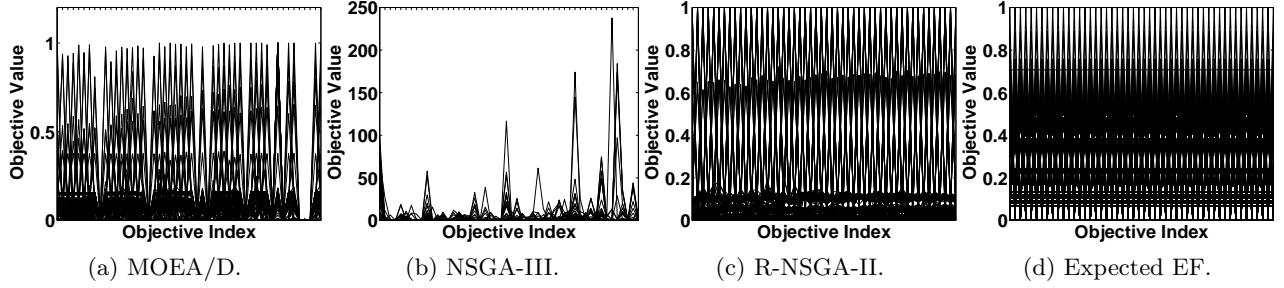


Figure 14: Parallel coordinate plots of different algorithms on 50-objective DTLZ4 problem.

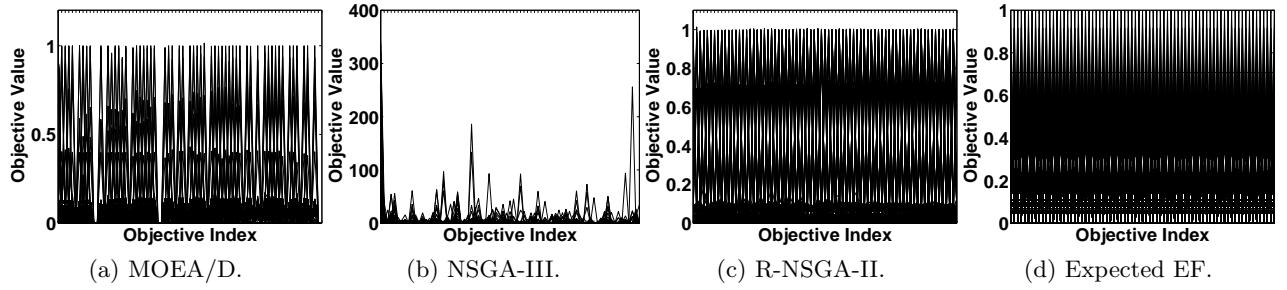


Figure 15: Parallel coordinate plots of different algorithms on 75-objective DTLZ4 problem.

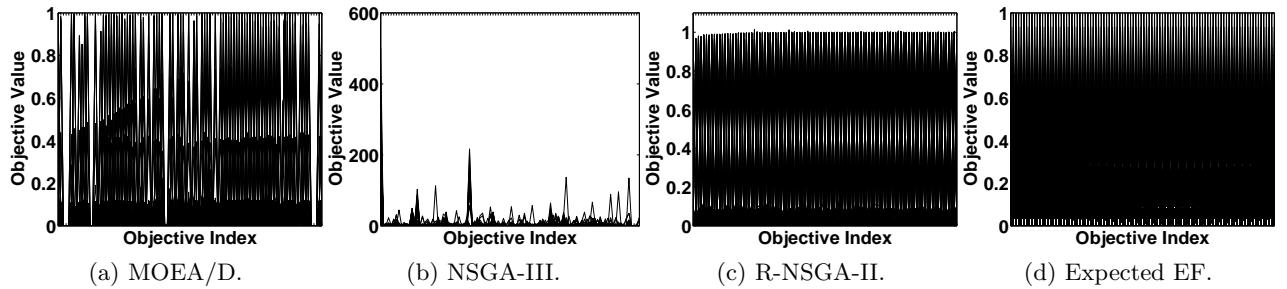


Figure 16: Parallel coordinate plots of different algorithms on 100-objective DTLZ4 problem.

2 Visual Comparisons on Classical Generative Method

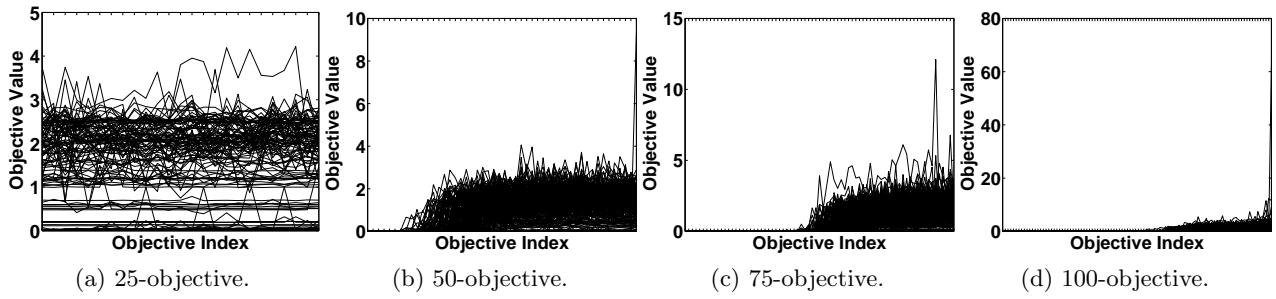


Figure 17: Parallel coordinate plots of classical generative method on DTLZ1 problem.

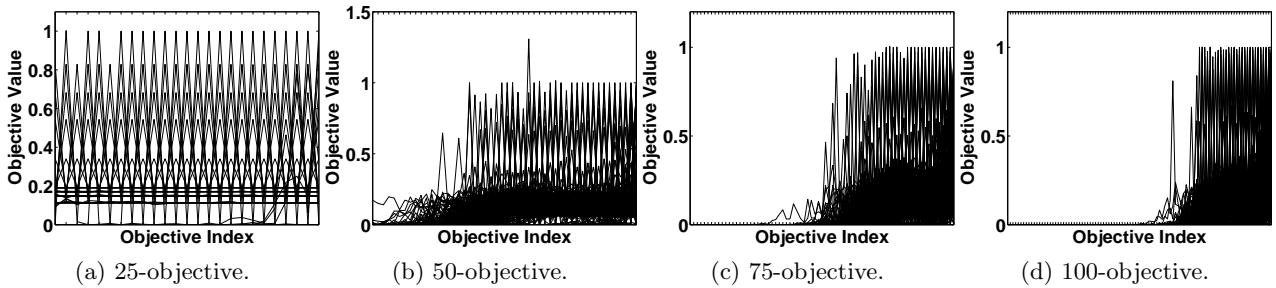


Figure 18: Parallel coordinate plots of classical generative method on DTLZ2 problem.

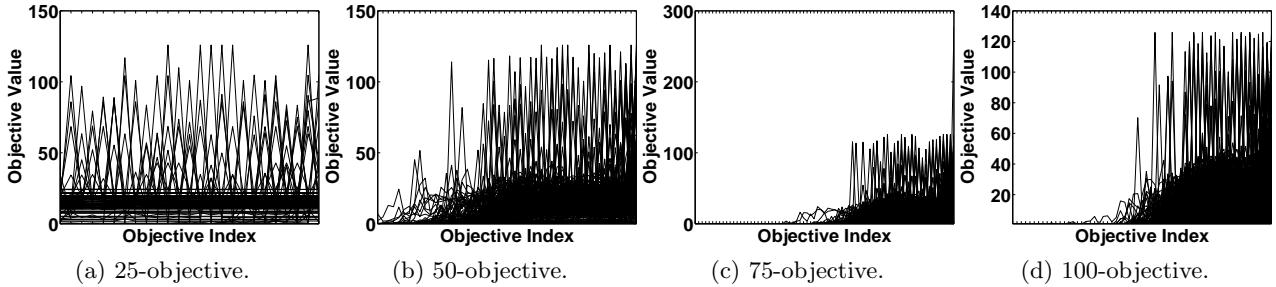


Figure 19: Parallel coordinate plots of classical generative method on DTLZ3 problem.

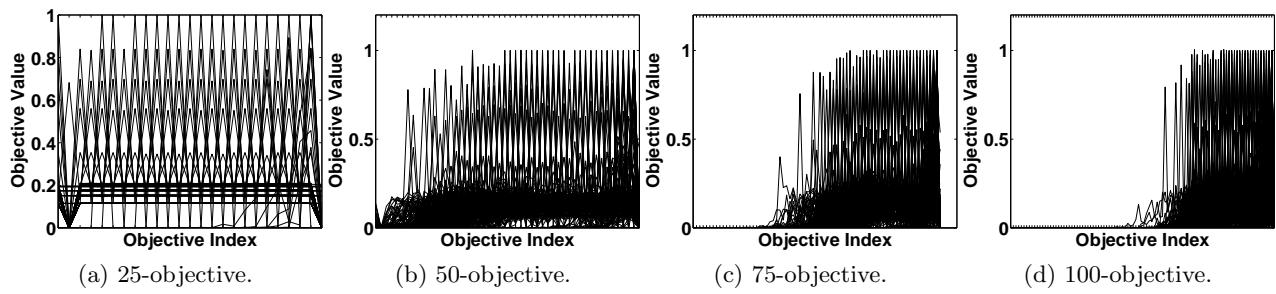


Figure 20: Parallel coordinate plots of classical generative method on DTLZ4 problem.

3 Visual Comparisons on Multi-Solution Strategy

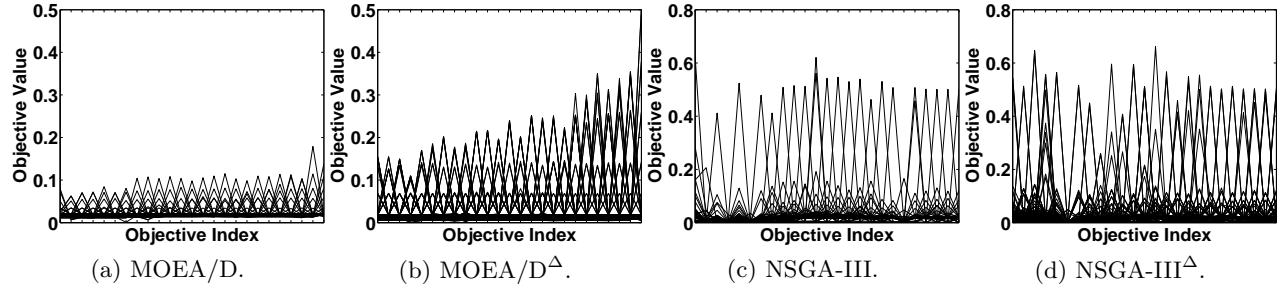


Figure 21: Parallel coordinate plots comparison of single-solution strategy and multi-solution strategy on 25-objective DTLZ1.

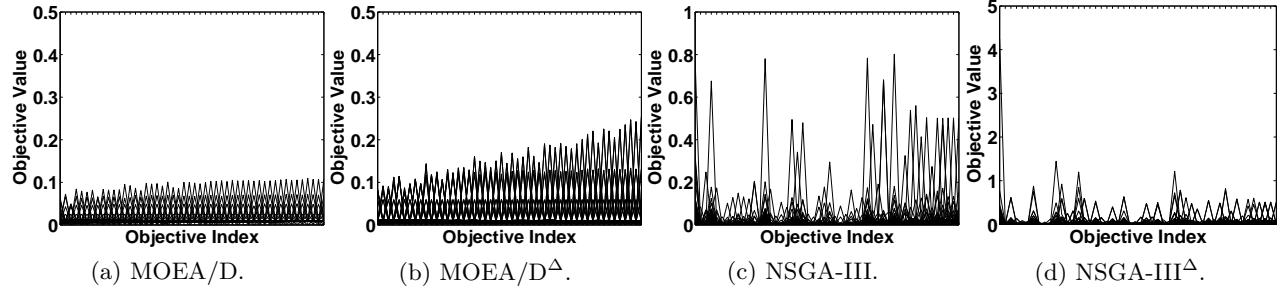


Figure 22: Parallel coordinate plots comparison of single-solution strategy and multi-solution strategy on 50-objective DTLZ1.

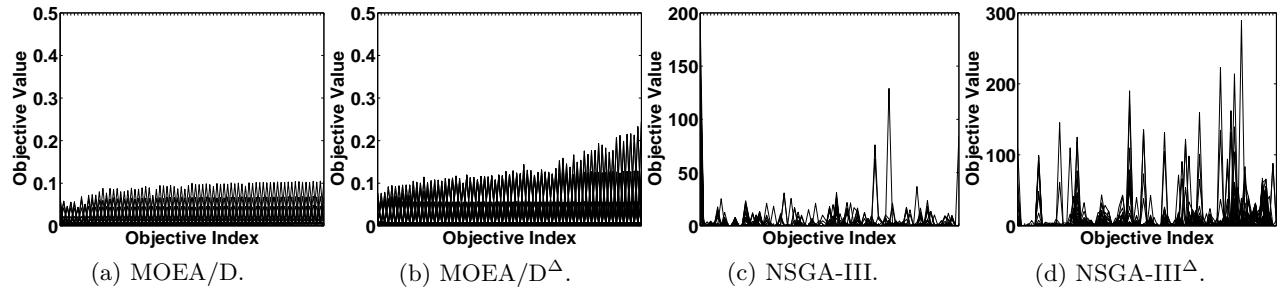


Figure 23: Parallel coordinate plots comparison of single-solution strategy and multi-solution strategy on 75-objective DTLZ1.

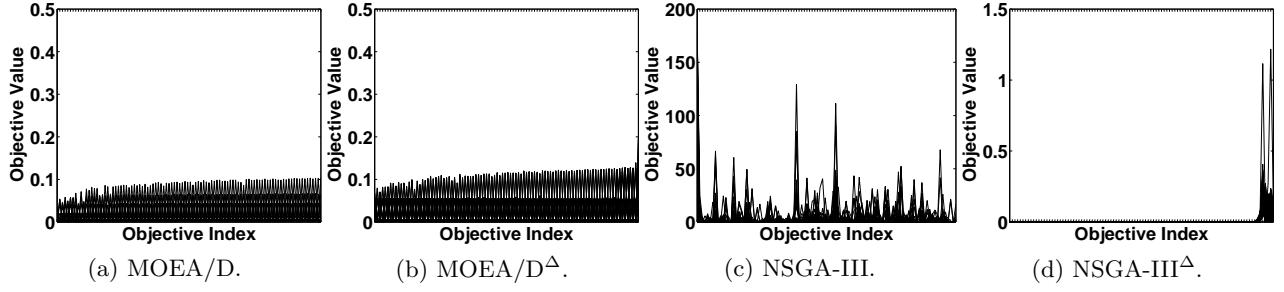


Figure 24: Parallel coordinate plots comparison of single-solution strategy and multi-solution strategy on 100-objective DTLZ2.

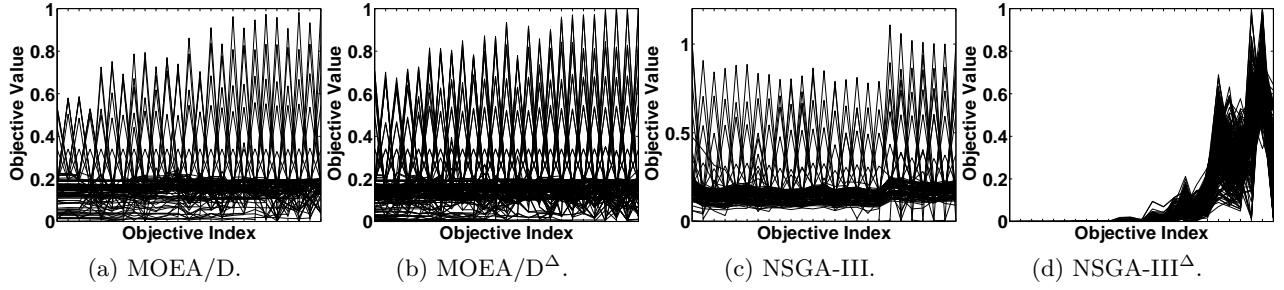


Figure 25: Parallel coordinate plots comparison of single-solution strategy and multi-solution strategy on 25-objective DTLZ2.

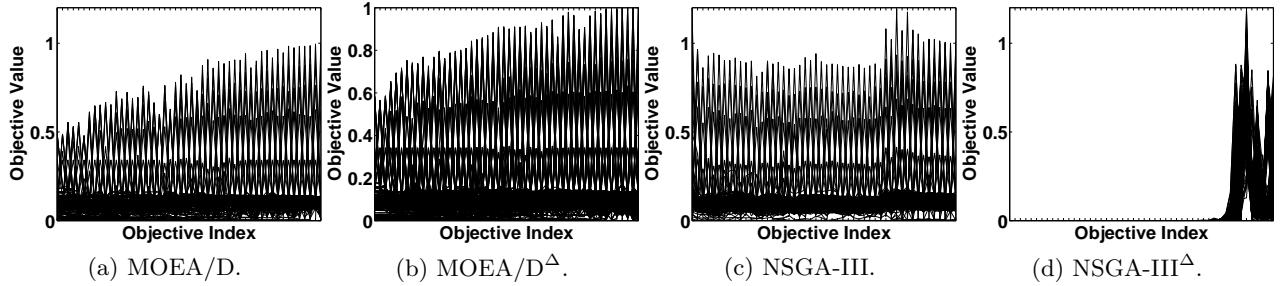


Figure 26: Parallel coordinate plots comparison of single-solution strategy and multi-solution strategy on 50-objective DTLZ2.

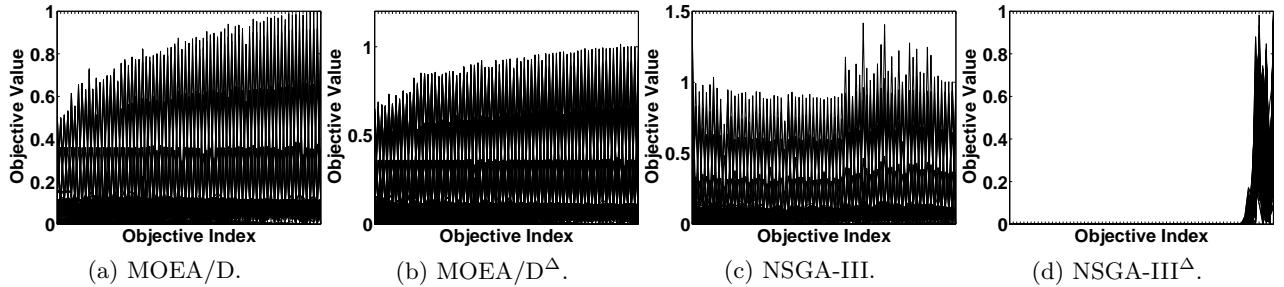


Figure 27: Parallel coordinate plots comparison of single-solution strategy and multi-solution strategy on 75-objective DTLZ2.

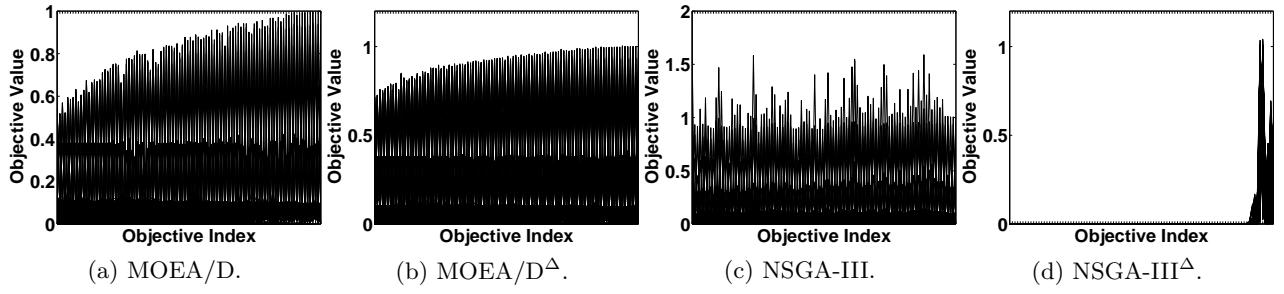


Figure 28: Parallel coordinate plots comparison of single-solution strategy and multi-solution strategy on 100-objective DTLZ2.

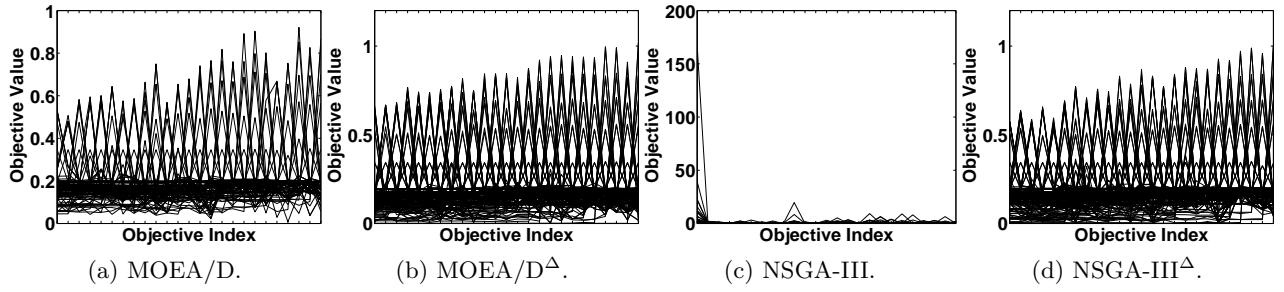


Figure 29: Parallel coordinate plots comparison of single-solution strategy and multi-solution strategy on 25-objective DTLZ3.

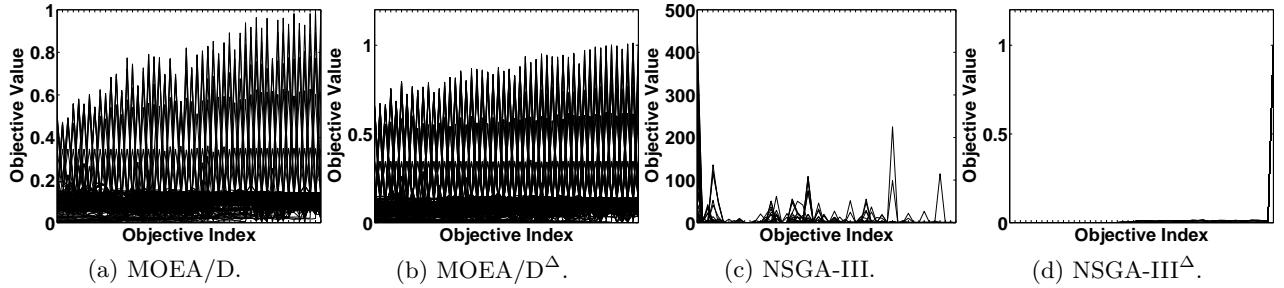


Figure 30: Parallel coordinate plots comparison of single-solution strategy and multi-solution strategy on 50-objective DTLZ3.

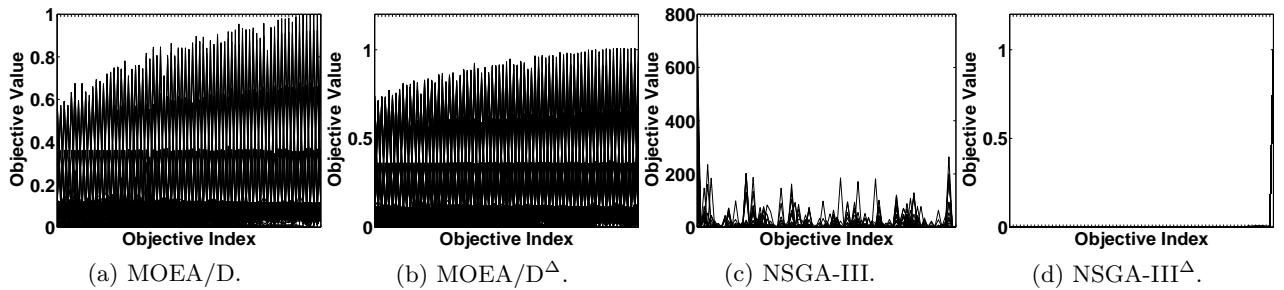


Figure 31: Parallel coordinate plots comparison of single-solution strategy and multi-solution strategy on 75-objective DTLZ3.

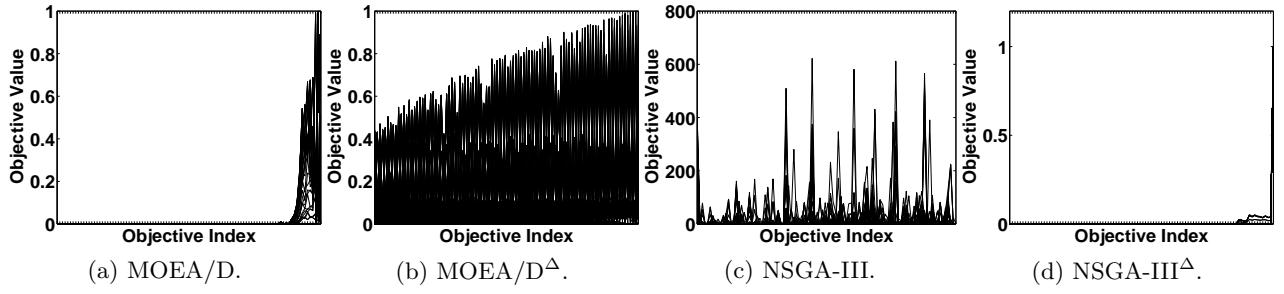


Figure 32: Parallel coordinate plots comparison of single-solution strategy and multi-solution strategy on 100-objective DTLZ3.

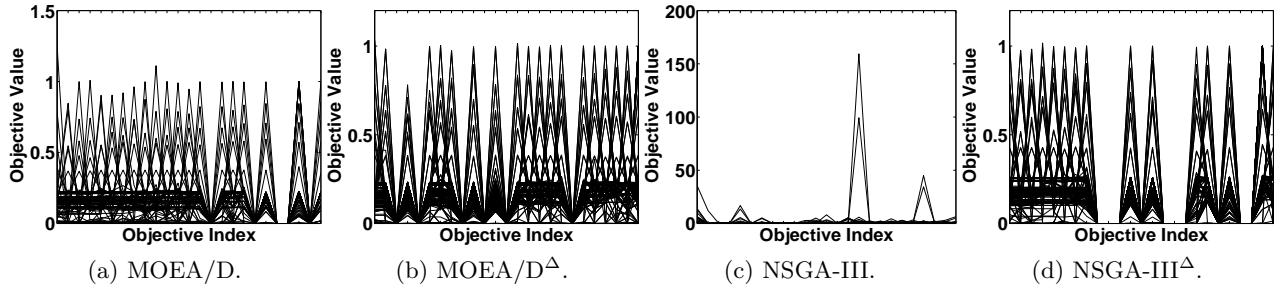


Figure 33: Parallel coordinate plots comparison of single-solution strategy and multi-solution strategy on 25-objective DTLZ4.

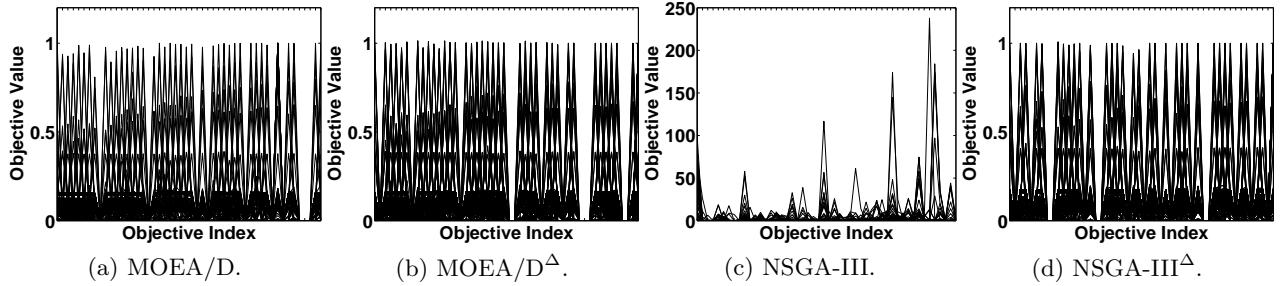


Figure 34: Parallel coordinate plots comparison of single-solution strategy and multi-solution strategy on 50-objective DTLZ4.

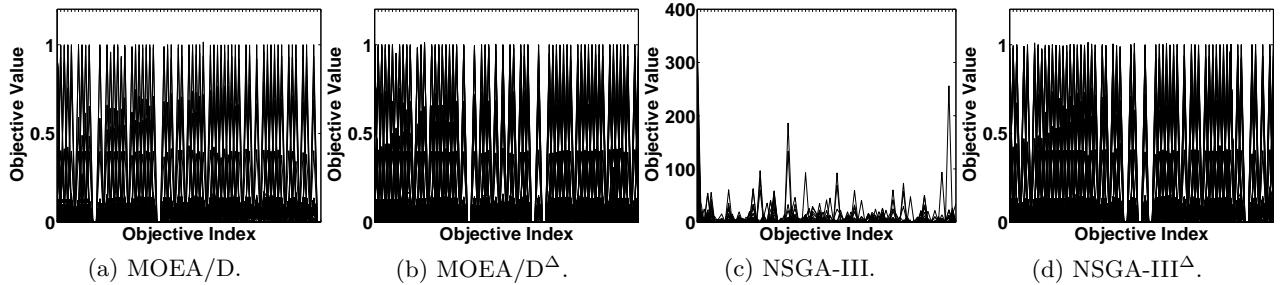


Figure 35: Parallel coordinate plots comparison of single-solution strategy and multi-solution strategy on 75-objective DTLZ4.

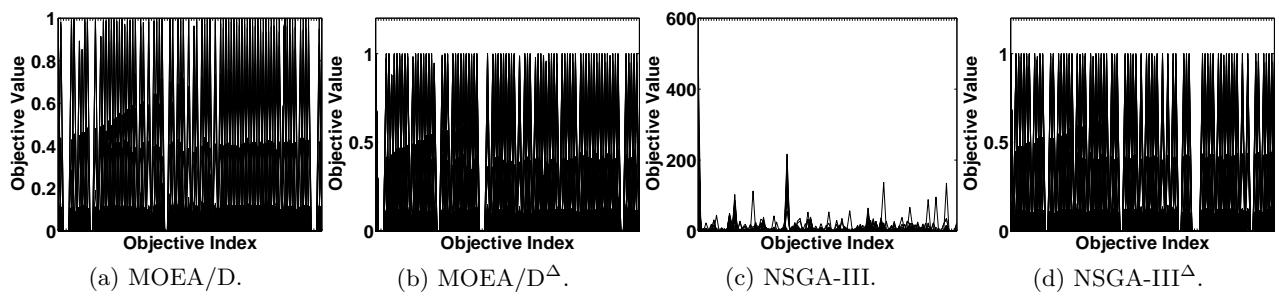


Figure 36: Parallel coordinate plots comparison of single-solution strategy and multi-solution strategy on 100-objective DTLZ4.