On Dealing with Uncertainties from Kriging Models in Offline Data-driven Evolutionary Multiobjective Optimization (Supplementary Material)

Atanu Mazumdar, Tinkle Chugh, Kaisa Miettinen

Manuel López-Ibáñez

October 12, 2018

List of Figures

1 Box plot of IGD for 11 runs for two objective problems. "Gen","Appr1","Appr2" and "Appr3" are the Generic, Approach 1, Approach 2 and Approach 3 respectively.(Opt.Rand is optimal-random sampling) 3

2 Box plot of IGD for 11 runs for three objective problems. "Gen","Appr1","Appr2" and "Appr3" are the Generic, Approach 1, Approach 2 and Approach 3 respectively.(Opt.Rand is optimal-random sampling) 3

3 Box plot of IGD for 11 runs for five objective problems. "Gen","Appr1","Appr2" and "Appr3" are the Generic, Approach 1, Approach 2 and Approach 3 respectively.(Opt.Rand is optimal-random sampling) 4

4 Final solutions obtained of the run with the median IGD value using different approaches for LHS sampling for DTLZ4 Problem. 4

5 Final solutions obtained of the run with the median IGD value using different approaches for optimal-random sampling for DTLZ4 Problem. 5

6 Final solutions obtained of the run with the median IGD value using different approaches for LHS sampling for DTLZ5 Problem. 5

7 Final solutions obtained of the run with the median IGD value using different approaches for optimal-random sampling for DTLZ5 Problem. 6

8 Final solutions obtained of the run with the median IGD value using different approaches for LHS sampling for DTLZ6 Problem. 6

9 Final solutions obtained of the run with the median IGD value using different approaches for optimal-random sampling for DTLZ6 Problem. 7
10 Final solutions obtained of the run with the median IGD value using different approaches for LHS sampling for DTLZ7 Problem. 7
11 Final solutions obtained of the run with the median IGD value using different approaches for optimal-random sampling for DTLZ7 Problem. 8
12 RMSE of the final solutions for three objective problems, LHS sampling. Here f1 and f2 are the objectives and "Gen","Appr1","Appr2" and "Appr3" are the Generic, Approach 1, Approach 2 and Approach 3 respectively. 9
13 RMSE of the final solutions for three objective problems, Random sampling. Here f1 and f2 are the objectives and "Gen","Appr1","Appr2" and "Appr3" are the Generic, Approach 1, Approach 2 and Approach 3 respectively. 10
14 RMSE of the final solutions for three objective problems, optimal-random sampling. Here f1 and f2 are the objectives and "Gen","Appr1","Appr2" and "Appr3" are the Generic, Approach 1, Approach 2 and Approach 3 respectively. 11

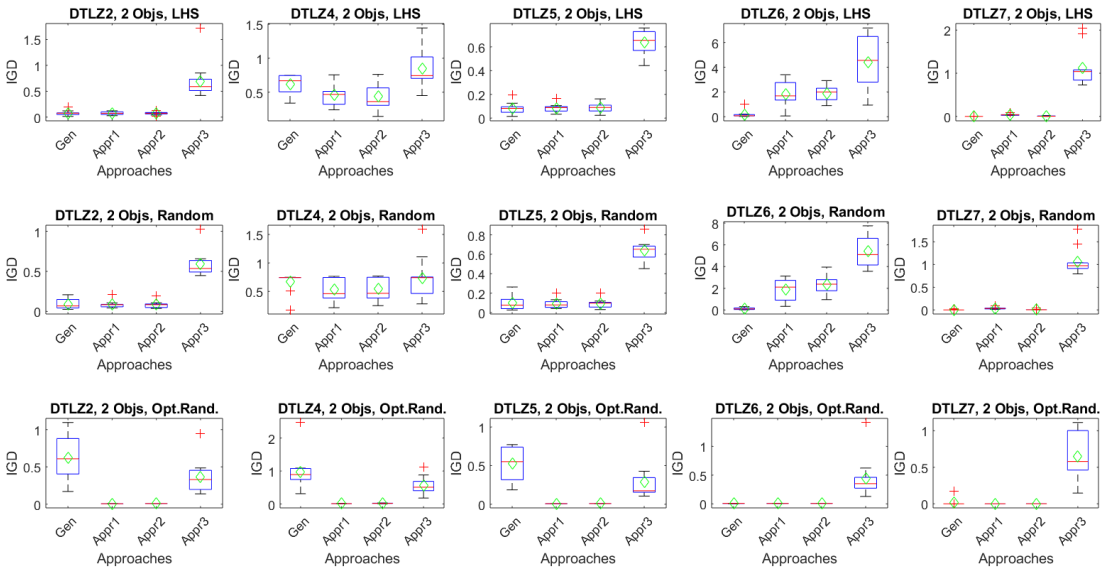


Figure 1: Box plot of IGD for 11 runs for two objective problems. "Gen","Appr1","Appr2" and "Appr3" are the Generic, Approach 1, Approach 2 and Approach 3 respectively.(Opt.Rand is optimal-random sampling)

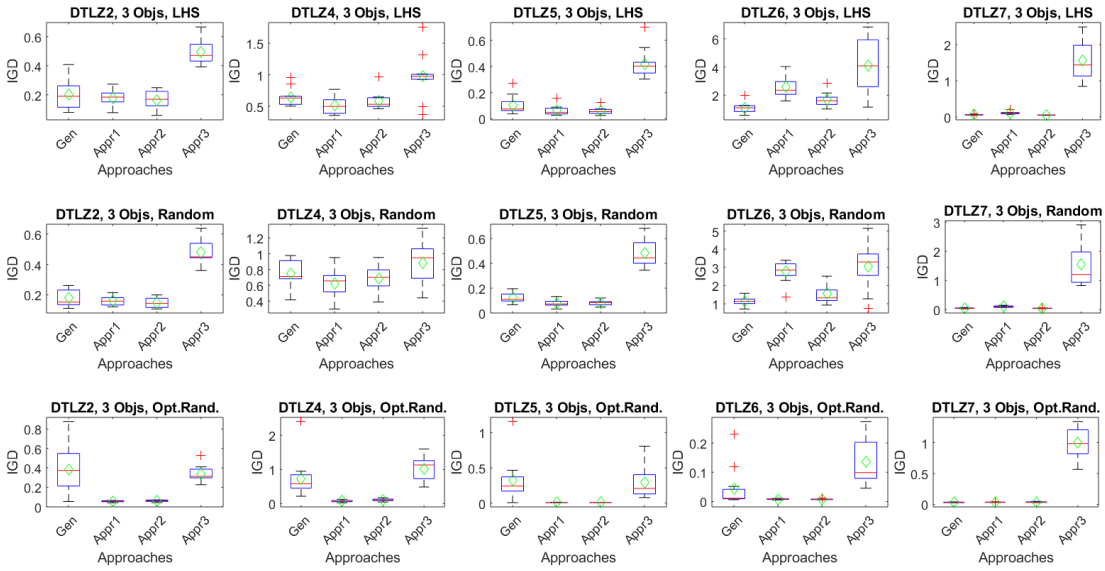


Figure 2: Box plot of IGD for 11 runs for three objective problems. "Gen","Appr1","Appr2" and "Appr3" are the Generic, Approach 1, Approach 2 and Approach 3 respectively.(Opt.Rand is optimal-random sampling)

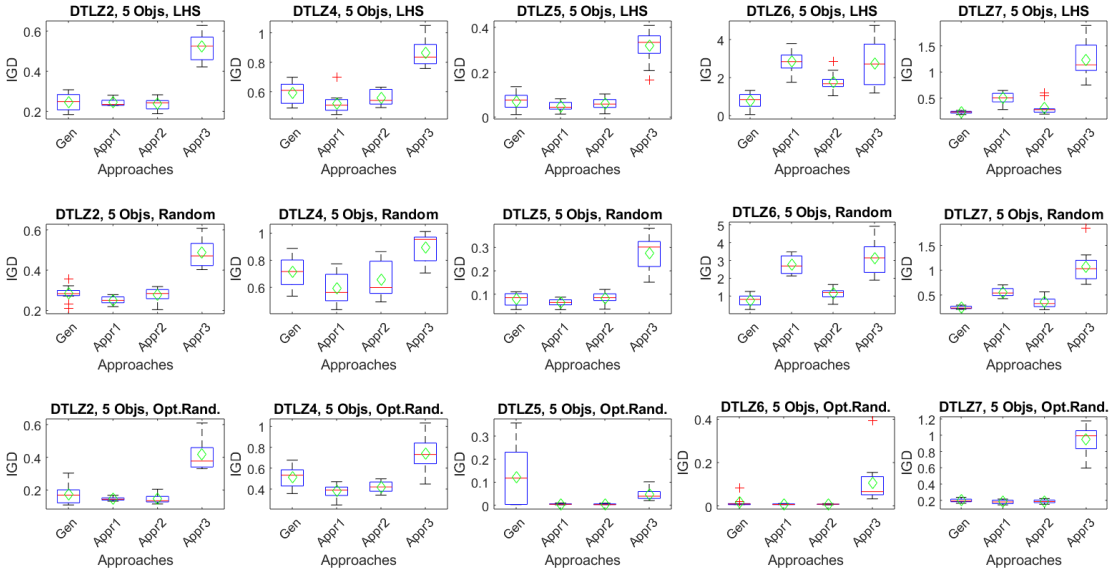


Figure 3: Box plot of IGD for 11 runs for five objective problems. "Gen","Appr1","Appr2" and "Appr3" are the Generic, Approach 1, Approach 2 and Approach 3 respectively.(Opt.Rand is optimal-random sampling)

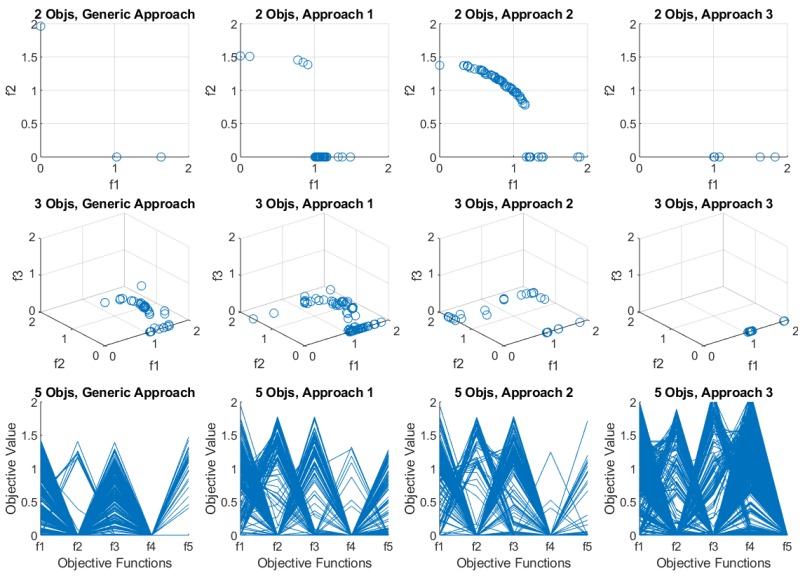


Figure 4: Final solutions obtained of the run with the median IGD value using different approaches for LHS sampling for DTLZ4 Problem.

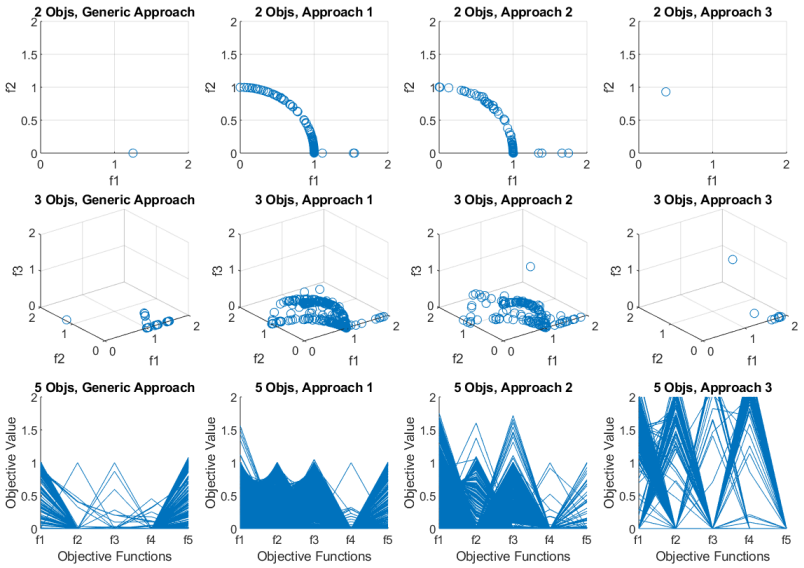


Figure 5: Final solutions obtained of the run with the median IGD value using different approaches for optimal-random sampling for DTLZ4 Problem.

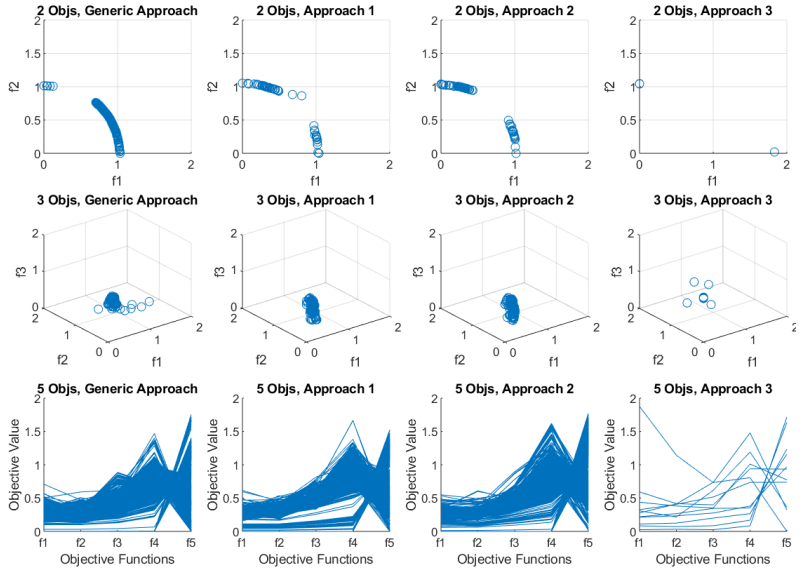


Figure 6: Final solutions obtained of the run with the median IGD value using different approaches for LHS sampling for DTLZ5 Problem.

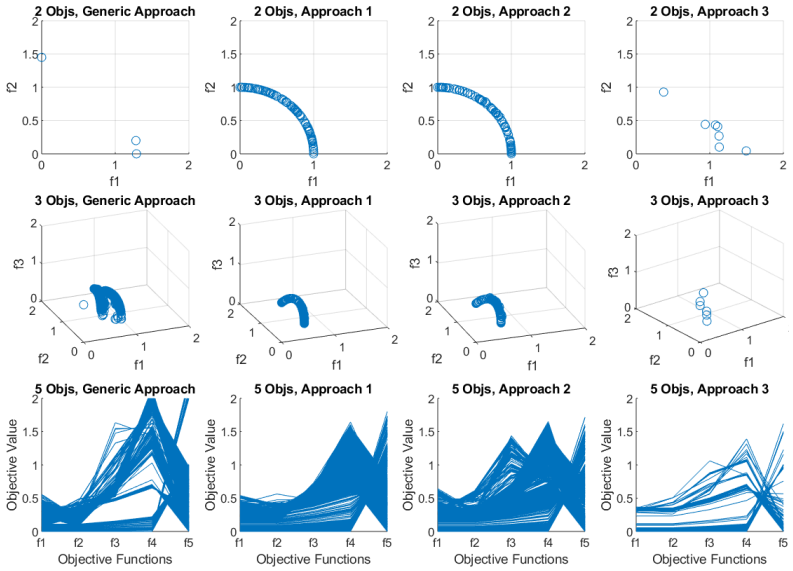


Figure 7: Final solutions obtained of the run with the median IGD value using different approaches for optimal-random sampling for DTLZ5 Problem.

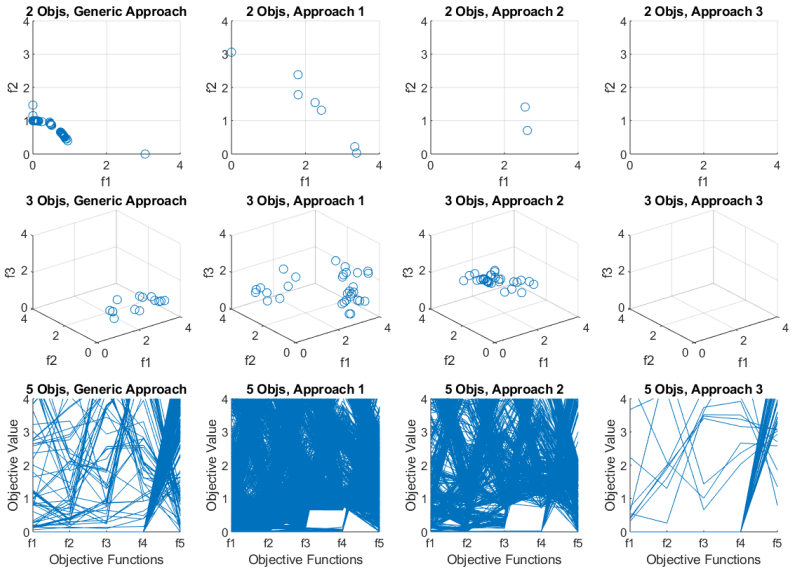


Figure 8: Final solutions obtained of the run with the median IGD value using different approaches for LHS sampling for DTLZ6 Problem.

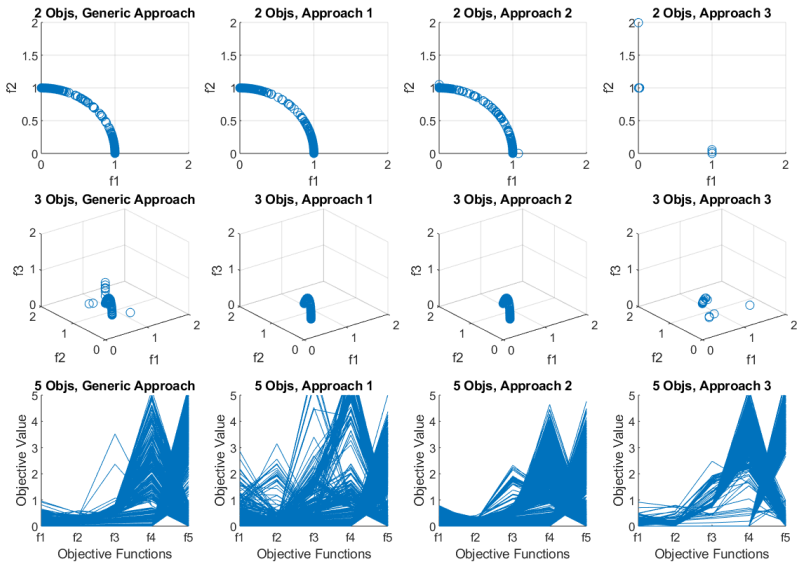


Figure 9: Final solutions obtained of the run with the median IGD value using different approaches for optimal-random sampling for DTLZ6 Problem.

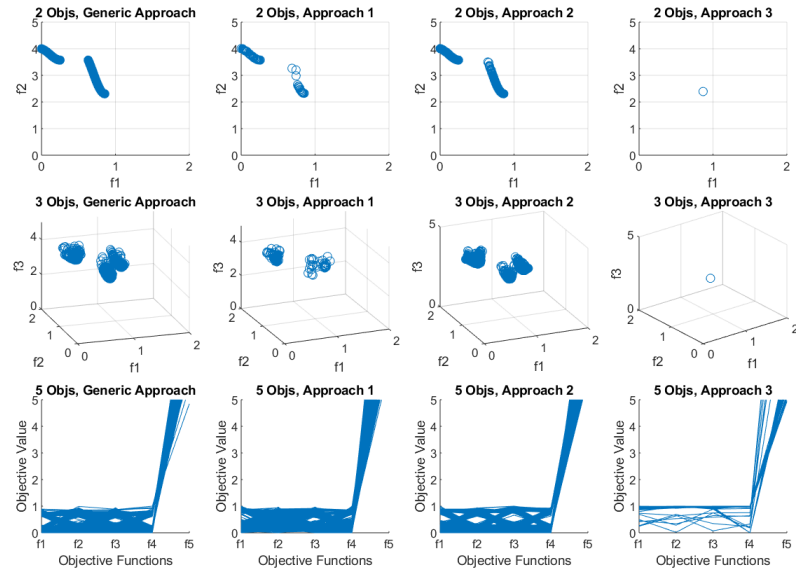


Figure 10: Final solutions obtained of the run with the median IGD value using different approaches for LHS sampling for DTLZ7 Problem.

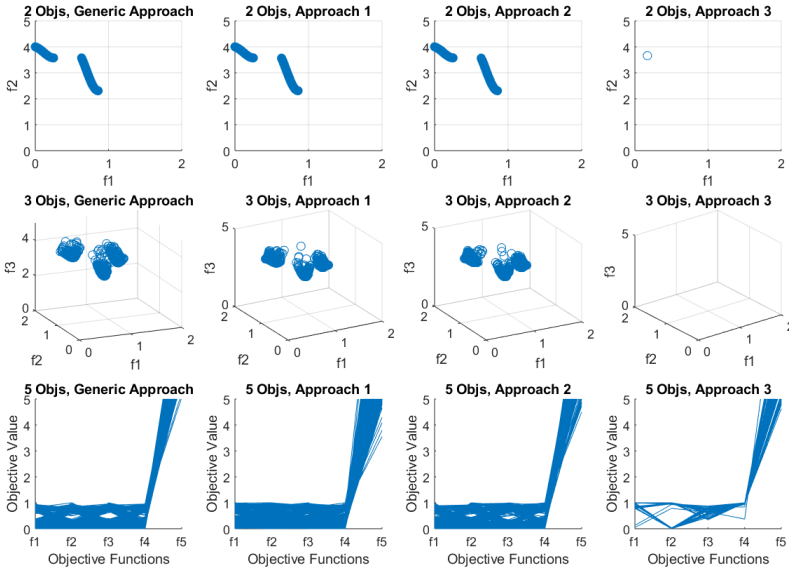
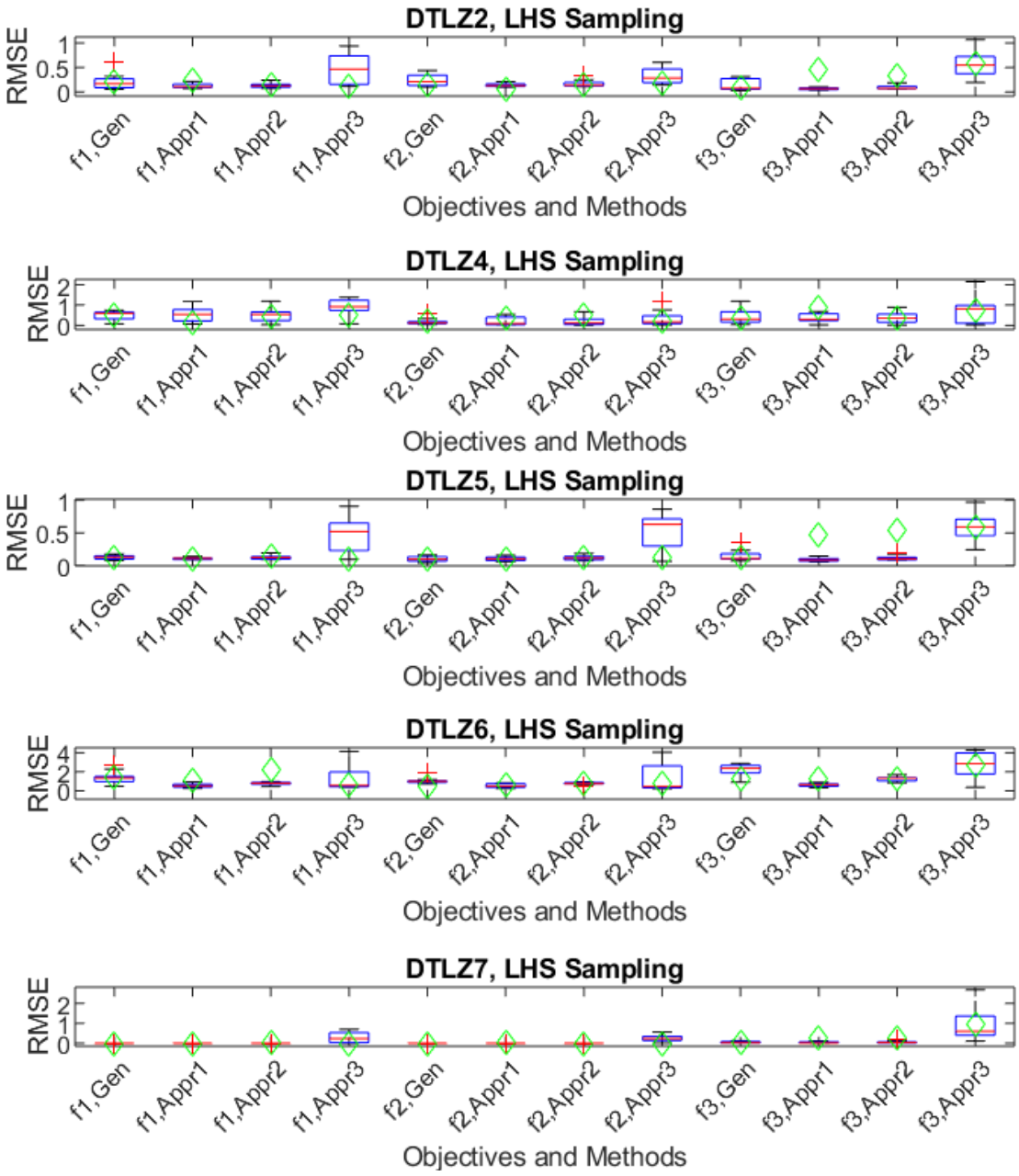


Figure 11: Final solutions obtained of the run with the median IGD value using different approaches for optimal-random sampling for DTLZ7 Problem.



.png

Figure 12: RMSE of the final solutions for three objective problems, LHS sampling. Here f1 and f2 are the objectives and "Gen","Appr1","Appr2" and "Appr3" are the Generic, Approach 1, Approach 2 and Approach 3 respectively.

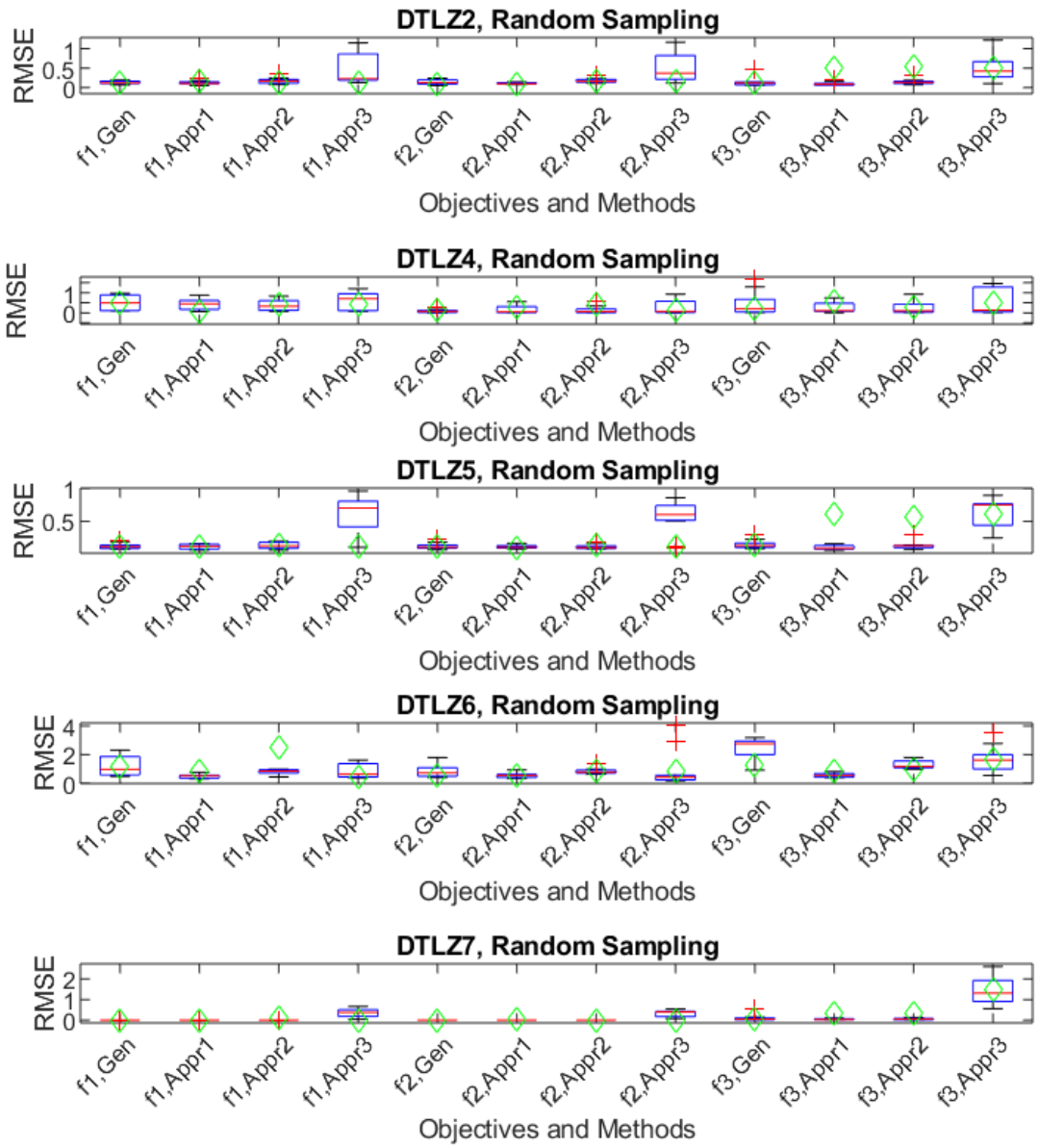


Figure 13: RMSE of the final solutions for three objective problems, Random sampling. Here f1 and f2 are the objectives and "Gen","Appr1","Appr2" and "Appr3" are the Generic, Approach 1, Approach 2 and Approach 3 respectively.

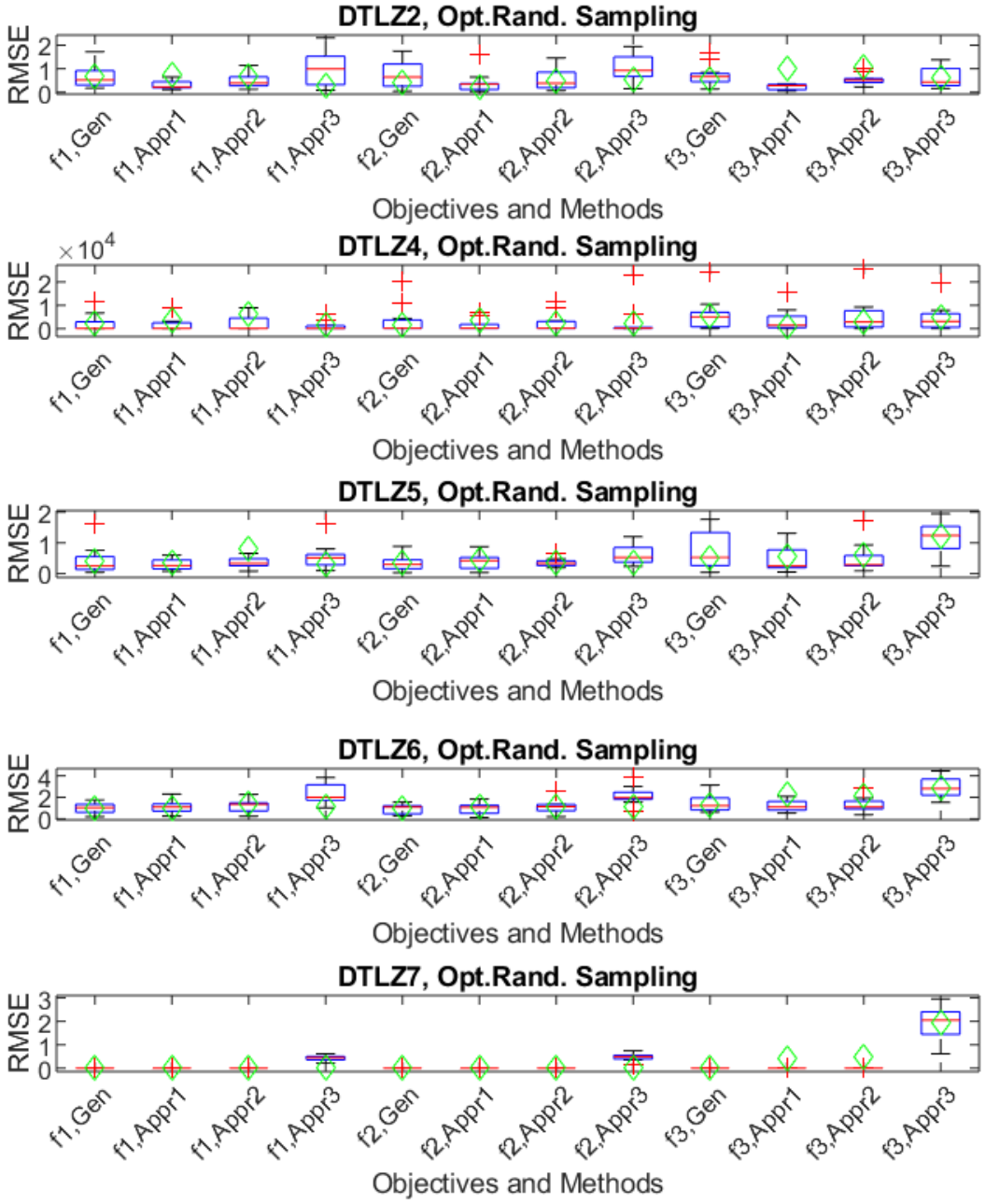


Figure 14: RMSE of the final solutions for three objective problems, optimal-random sampling. Here f1 and f2 are the objectives and "Gen","Appr1","Appr2" and "Appr3" are the Generic, Approach 1, Approach 2 and Approach 3 respectively.