Figure 1 budget plots for part of the first group functions

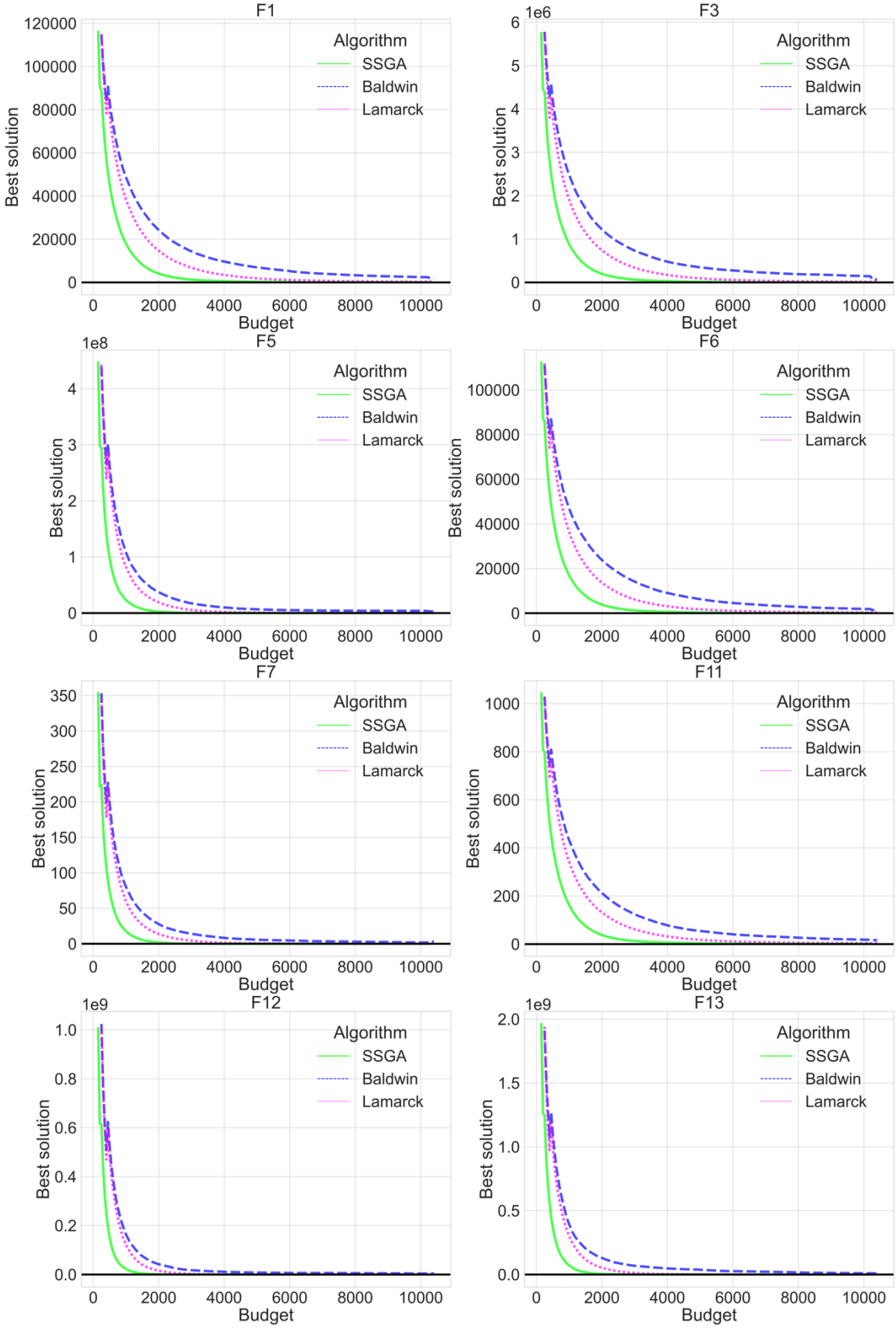


Figure 2 budget plots for part of first group functions

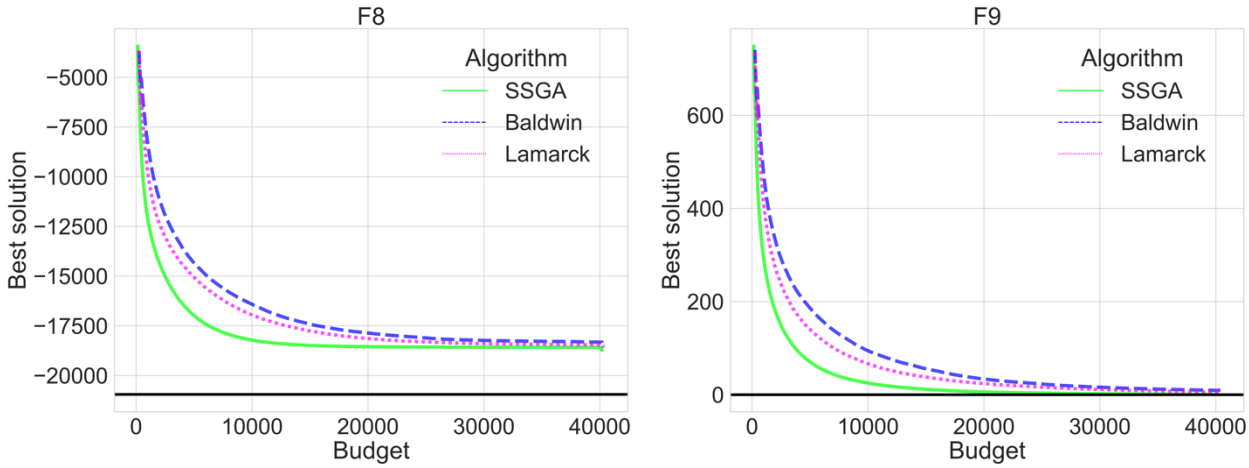
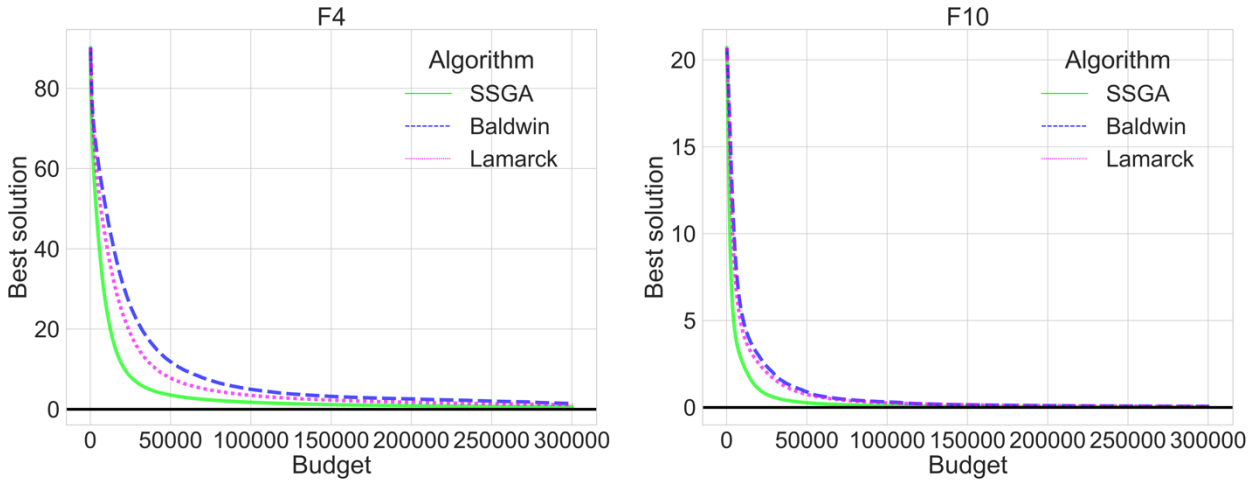
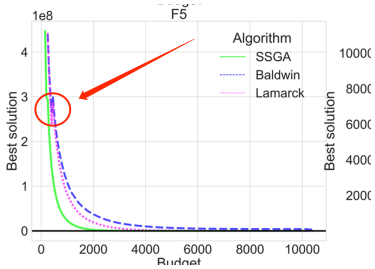


Figure 3 budget plots for part of first group functions



Notes.

1. The green line is always a little to the left of the other two lines because the SSGA has less budget for initialization, half that of Lamarck and Baldwin. Baldwin and Lamarck need to compute f.() twice during each iteration(one individual has a genotype and a phenotype), but SSGA only needs to compute f.() once (one individual only has one genotype).



2. This happens because sometimes 200 individuals are needed for initialization and sometimes only 100 individuals are needed, so when budget=200, some parameter combinations have already finished initialization 100+100 iterations, and some have only just finished initialization200.

Figure 4 budget plots for the second group functions

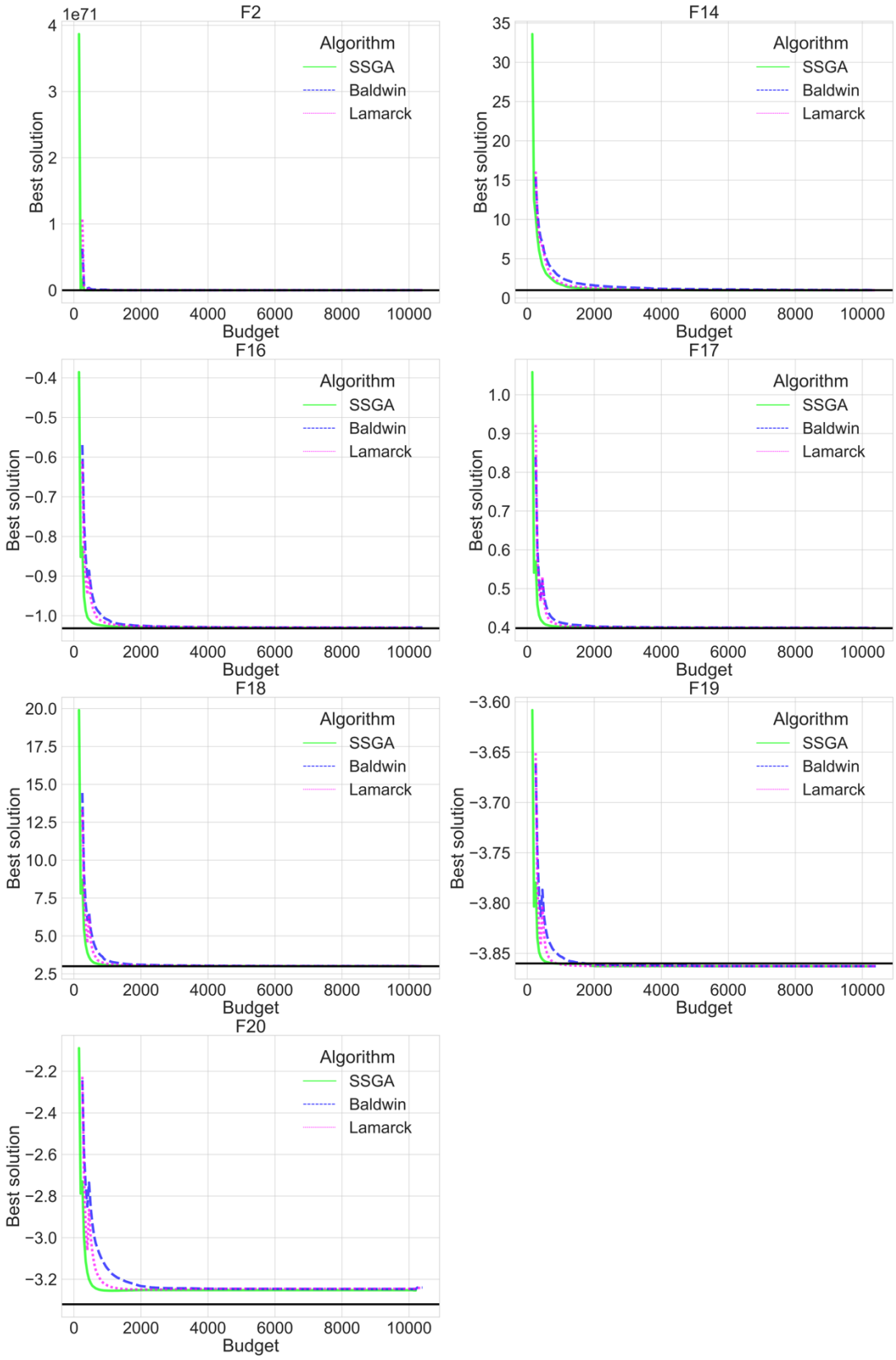
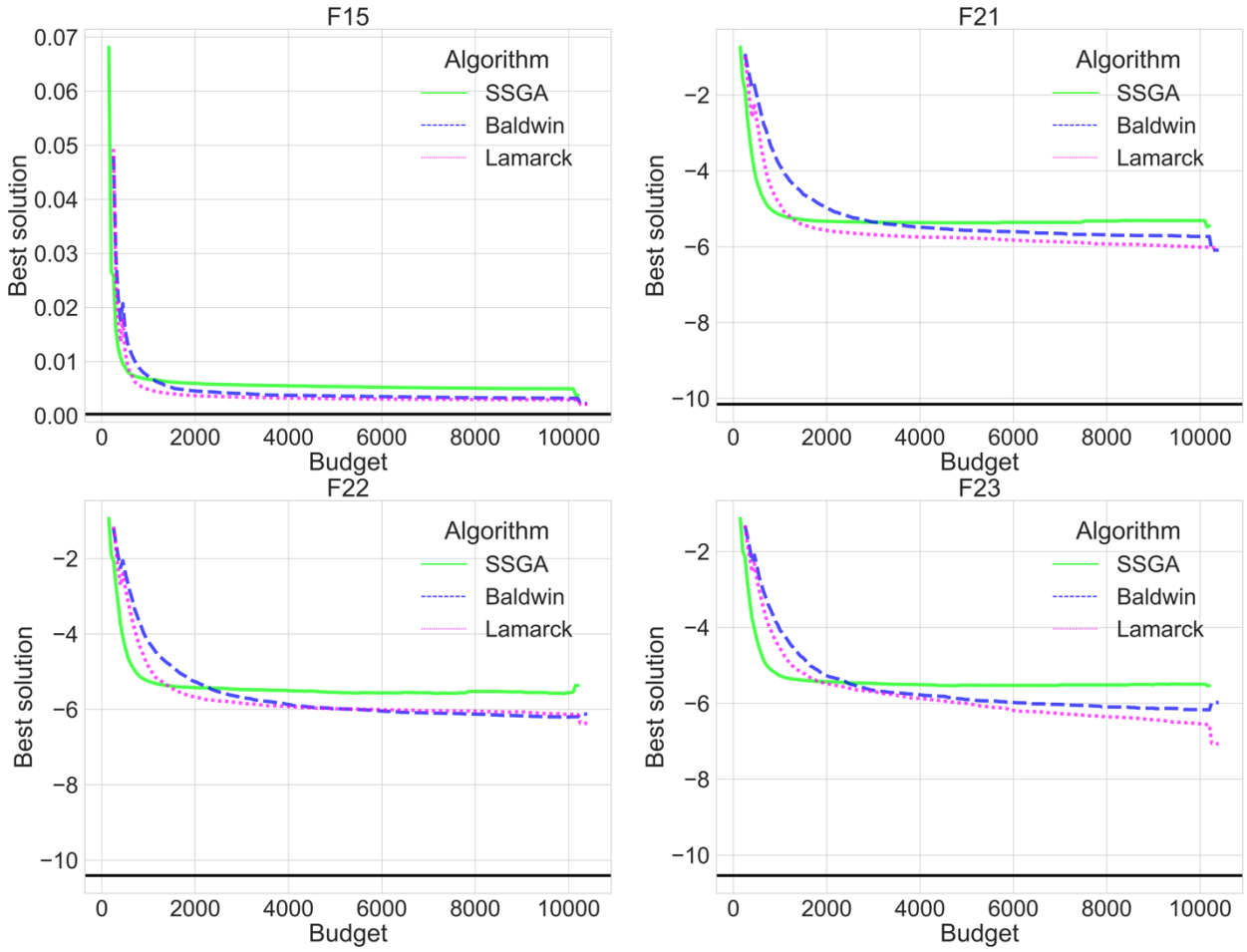


Figure 5 budget plots for the third group functions



Conclusion:

- The quality of the minimums found in the first and second groups of functions is comparable in the end for three algorithms, but if budget is limited, then it is better to use the SSGA.
- In the third group of functions, Lamarck and Baldwin are able to find better outcomes.