The implementation of the nine test problem can be seen in the packages 1) momfo.problems.base, and 2) momfo.problems.benchmarks.

Three MOMFO algorithm MOMFEA is implemented in the package momfo.metaheuristics.momfea

Its underling basic algorithms, i.e., NSGA-II is implemented in the package momfo.metaheuristics.nsgaii.

For MOMFEA or NSGA-II, the xxx\_main.java is provided for running the algorithm on a test problem (it is a single task for the NSGA-II) for a number of independent runs and obtaining the IGD results.

There are also some additional files which are explained as follows:

1. MData:

This folder save the data of the rotation matrix that are used in the proposed test problems. There are four plan text files in this folder corresponding to four rotation matrixes respectively.

1. M\_CIMS\_2.txt: the data of
2. M\_PIMS\_1.txt: the data of
3. M\_PIMS\_2.txt: the data of
4. M\_NIMS\_2.txt: the data of

In each file of the rotation matrix, every line represents a row of the matrix, and any two adjacent values are separated by a whitespace.

1. SVData:

This folder saves the data of shift vectors that are used in the proposed test problems. There are five plan text files in this folder corresponding to five shift vectors respectively.

1. S\_CIMS\_2.txt: the data of
2. S\_PIHS\_2.txt: the data of
3. S\_PIMS\_1.txt: the data of
4. S\_PILS\_2.txt: the data of
5. S\_NILS\_1.txt: the data of

In each file, the shift vector is saved in a line, and any two adjacent values in it are separated by a whitespace.

1. PF

This fold saves the data of the reference Pareto fronts, which are used to compute IGD values. There are four files in this folder corresponding to four different Pareto fronts.

1. convex.pf: for the Pareto front
2. concave.pf: for the Pareto front
3. circle.pf: for the Pareto front
4. sphere.pf: for the Pareto front

In each file, an objective vector over the Pareto front is put in a line. The first value in a line represents the first objective value, and the second value in a line represents the second objective value, and so on.

The provided source code is implemented based on the jmetal framework. It is free for academic usage. You can run it at your own risk. For any problem concerning the code, please feel free to contact Dr. Yuan Yuan (yyxhdy@gmail.com).