

Instructions for Companion Website Use

This Companion Website supports the book of numerical lubrication methods. It contains 23 subdirectories from 2 to 24, including 31 separate lubrication calculation programs. The number of each subdirectory is corresponding to the chapter number of the book. In the corresponding subdirectories, the results of the source programs of the corresponding calculation procedure and numerical examples of the book are given. Therefore, users can use them as references.

The source programs in the companion website are written in FORTRAN language with version of FORTRAN90. Except Subdirectory 21 and 22, all the other programs are compatible with any of FORTRAN90 language software tools. After compile and link, the execution files (*.exe) can be run under the Microsoft Windows or Dos environment.

For convenience, most parameters are directly pre-assigned in the programs. If the user needs to change these parameters, he can directly change the values in the original program, and then re-compile and re-link them. If the user wishes to obtain a number of different computing variables but not re-compile the programs, he can change the assignment style to the reading style so as to reduce the compiling and linking work.

Subdirectories 21 and 22 are the special packages which need to run under the Visual Fortran 6.5 or later compatible tools. We suggest that a user do not change the packages if he is not familiar with the program in case he obtains the wrong solutions. In the Visual Fortran 6.5 environment, the user can directly run of the corresponding *.dsw documents and through the input interface to enter or change the value of the variable parameters and then he can obtain the calculation results easily. The units and meaning of the specific variables in the interface can be referred to the corresponding chapter of the book.

Therefore, most programs need not provide many input data, but the program in Subdirectory 24 needs to provide a data file named fort.20. The format of the file can refer to Chapter 24 of the book. For ease of use, we supply a fort.20 file in the subdirectory for reference. It is the topography data of a magnetic head. Please delete the original fort.20 file and give your own data file of fort.20 for your working conditions. Users can also change the source program to change the input file name.

For convenience of different users, after the program has run, the calculation results will be output in the files. Therefore, users can directly open the output files to read the results data or draw the figures according to the output format of the data. Users can also draw the curves or three-dimensional graphs by the drawing tool software to read these output files. Among them, the easiest way is to use Excel to open an output file. And then use the drawing functions to draw the corresponding graph. If the user wishes to use a special drawing tool software to read the output data, please find the corresponding output statement in the source program and change the format to the required of the drawing tool so that the statements can correctly output the format files.

In the corresponding section of the book, we have introduced the corresponding program in detail. Therefore, it is recommended that user read the book carefully before rewrite the program.

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