

# ADORE Update Version 5.31

**Release Date: July 31, 2007**

ADORE 5.31 is a minor enhancement of version 5.30 to fix the following two problems:

1. For some roller bearings the nonlinear equations computing the geometrical interactions at the roller/flange contact did not converge in version 5.30. The associated numerical procedure is enhanced to fix this problem. However, it should be noted that unlike ball bearings, roller bearings cannot support small misalignments. When misalignments get large, particularly with lightly loaded roller bearings, the rollers become unloaded which lead to difficulties in convergence of the equilibrium equations.
2. In the print out in quasi-static mode, a scale factor on race angular velocities is correctly applied to show the race velocities in rpm.

The severity of the roller bearing problem has prompted immediate release of this version.

## **Program File Contents:**

As usual, the scheduled updates are distributed on a CD in normal data format. The files may be easily extracted from this disk on any computer system and then transferred to appropriate system for which ADORE is licensed for. Temporary fixes during the subscription period of annual ADORE update service shall continue to be distributed electronically as needed.

The media may contain up to four subdirectories as listed below:

### **Disk1**

#### **Update531.pdf:**

A pdf file containing notes of the latest updates (this file).

#### **adoreInput.txt:**

A text file containing details of ADORE input data.

#### **adoreManual.pdf:**

ADORE user's manual containing detailed instructions for program installation and use.

#### **Ball:**

Subdirectory containing ball bearing test case

#### **Roller:**

Subdirectory containing roller bearing test case

### **Disk2**

#### **\*.f files:**

ADORE FORTRAN-90 source files

#### **Makefile:**

Make file to create ADORE executable on IBM AIX systems

## Disk3

Supplied only with license to optional Java facilities.

### **adrJavFacDoc.pdf:**

User instructions for installation of Java input and plot facilities, adrInput and adrPlot.

### **setup.bat:**

Setup batch file to compile adrInput and adrPlot on Windows system.

### **adrInput.bat:**

Batch file to execute adrInput

### **adrPlot.bat:**

Batch file to execute adrPlot

### **\*.java:**

Java source codes for adrInput and AdrPlot.

## Disk4

Supplied only with license to optional graphic animation facility AGORE.

### **AgoreNotes.pdf:**

Notes and installation instructions for animation facility AGORE.

### **Agore.bat:**

Batch file to execute AGORE.

### **setup.bat:**

Setup batch file to compile and install AGORE on Windows System.

### **\*.java:**

Java source files for animation facility AGORE.

## Program Installation

The installation procedure presented below is primarily for IBM RS/6000 system, operating under the AIX 4.3 operating system. For other systems appropriate changes to the compilation command will have to be made.

### **ADORE:**

Installation of ADORE is simply accomplished by executing the makefile supplied in the Adore source directory. Copy all files from the Disk2 directory to appropriate directory on the hard disk and then, on an IBM system, issue the command:

```
./make
```

This will create an executable file adore, which could be installed in appropriate directory consistent with the user environment.

On non-IBM system, simply edit the make file to include appropriate compiler command instead of the xlf90 used on IBM system. Note that the option -c and -qmixed respectively mean that at this step perform compilation only, and that the variable names use mixed (both lower and upper case) characters. The option -qmixed is not absolutely essential for program operation; it is convenient during program development and debugging.

On the Windows system, if the Microsoft Developer Studio is used to create the executable, the following suggested procedure may be helpful.

1. Start Microsoft Developer Studio and select the File option to create a new project.
2. For type of application, select "Console Application" and name the application as adore51 or other desired name.
3. Once the project space is created, use the insert option to add source files. After navigating to the appropriate source directory, first add the file m\_parameters.f only. In the second step add all the m\_\*.f module files. In the final step all the other source file. The file to be added is simply selected by a mouse click on the file in the selection window. To select more than one file, simply hold the Ctrl key while clicking the mouse.
4. Now use the Build option to create the executable.

#### **Java facilities adrInput and adrPlot**

See instructions and setup files in subdirectory Disk3.

#### **AGORE**

See instructions in file AgoreNotes.pdf in Disk4 subdirectory.

### **Contact Information**

In the event of any questions and/or technical support please contact:

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