



**СУПЕРКОМПЬЮТЕРНЫЙ ЦЕНТР**  
*Южно-Уральского государственного университета*

# Пакет инженерного анализа DEFORM

**Лабораторные работы:**  
запуск задачи на выполнение в параллельном режиме

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# 1. Запуск решения задачи на кластере в параллельном режиме



My Documents

My Computer

My Network Places

Recycle Bin

Adobe Reader

Mozilla Firefox

**Seminar**

File Edit View Favorites Tools Help

Back Search Folders Go

Address C:\DEFORM3D\PROBLEM\Seminar

**File and Folder Tasks**

- Rename this file
- Move this file
- Copy this file
- Publish this file to the Web
- E-mail this file
- Delete this file

**Other Places**

- PROBLEM
- My Documents
- My Computer
- My Network Places

**Details**

	DEF_MPIenv DAT File 1 KB		DEF_MPIp4penv DAT File 1 KB
	DEFORM3D.PROB PROB File 1 KB		immersion12 Data Base File 238 KB

Directory

- PROBLEM
- Heating
- Seminar**

No preview is available

Pre Processor

- [DEFORM-3D Pre](#)
- [Machining \(Cutting\)](#)
- [Forming](#)
- [Die Stress Analysis](#)
- [Coating](#)
- [Shape Rolling](#)
- [Ring Rolling](#)
- [Heat Treatment](#)

Tool

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- [Preform Wizard](#)

Simulator

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- [Run \(options\)](#)
- [Stop](#)
- [Continue](#)
- [Process Monitor](#)
- [Simulation Graphics](#)

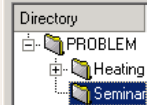
- [Batch Queue](#)
- [Add to Queue](#)

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- [Remote Process Monitor](#)

- [Monitor Floating License](#)

Post Processor

- [DEFORM-3D Post](#)
- [Microstructure](#)



immersion12.DB

- DEF\_MPIenv.DAT
- DEF\_MPIp4pew.DAT
- DEFORM3D.PROB



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**Simulation Options**

Multiple processor **Set Up...**

Simulation graphics

E-mail the result

Keep message file

No automatic remeshing (for nonconvergence)

### Multiple Processor Set Up

	Host Name	No. of Processors
1	NODE-17-06	4
2		
3		
4		
5		
6		

FEM

Partially parallel FEM  
 (solver only)  
 Max. number of processors: 4

Fully parallel FEM

Set as default  Shared memory  MB

**Simulation Options**

Multiple processor Set Up... Close

Simulation graphics

E-mail the result

Keep message file

No automatic remeshing (for nonconvergence)

▶ Start Q+ Add to Queue



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DEF\_MPIenv.DAT  
DEF\_MPIp4penv.DAT  
DEFORM3D.PROB

Summary Preview Message Log Memo

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Simulation Options

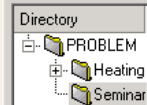
**Add to Queue**

Job is successfully added to queue.

**OK**

Close

to Queue



immersion12.DB

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**Simulation Options**

Multiple processor Set Up... Close

Simulation graphics

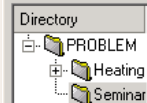
E-mail the result

Keep message file

No automatic remeshing (for nonconvergence)

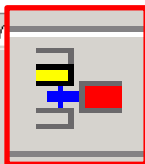
▶ Start

Q+ Add to Queue



immersion12.DB

- DEF\_MPlenv.DAT
- DEF\_MPlp4penw.DAT
- DEFORM3D.PROB



No preview is available

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Batch queue setup

	Status	Prob ID	Path
1		immersion12	C:\DEFORM3D\PROBLEM\Seminar
2			
3			
4			
5			
6			
7			

Close

Refresh

**Start**

Add...

Delete

Delete All

Stop

Directory

- PROBLEM
  - Heating
  - Seminar

DEF\_M  
DEF\_M  
DEFOR

Q+ immersion12.DB

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Batch queue setup

Status	Prob ID	Path
1	immersion12	C:\DEFORM3D\PROBLEM\Seminar
2		
3		
4		
5		
6		
7		

Simulation Queue Submitted.

Simulation queue has been submitted.  
You can check the simulation status by using process monitor.

OK

Close Refresh Start Add... Delete Delete All Stop

Directory

- PROBLEM
  - Heating
    - Running** Seminar

Summary Preview Message Log Memo

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### Batch queue setup

	Status	Prob ID	Path
1		immersion12	C:\DEFORM3D\PROBLEM\Seminar
2			
3			
4			
5			
6			
7			

Close Refresh Start Add... Delete Delete All Stop

ool

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```

TIME INCREMENT = 0.500000

TOTAL CPU TIME UP TO THIS STEP = 26.6220 (sec)
SUBTOTAL CPU TIME OF THIS STEP = 0.2500 (sec)

RESULT I/O 0.0470

CPU FOR DEFORMATION CALCULATIONS (sec)
INTERFACE GENERATION 0.0000 1
EQ. INDEXING PREPERATION 0.0000 0
STIFFNESS MATRIX GENERATION 0.0630 2
BOUNDARY CONDITION CAL. 0.0150 2
EQUATION SOLVING 0.0790 2
CONTACT TIME CALCULATION 0.0620 1
MESH CHECKS 0.0000 1
INSIDE/OUTSIDE CHECK 0.0000 0

STEP NUMBER = 100

DIRECT METHOD

ITERATION VELOCITY RELATIVE VELOCITY RELATIVE FORCE SOLVING TIME
NUMBER NORM ERROR NORM ERROR NORM (SEC)
1 0.5087142792E+04 0.2731617547E-02 0.5611706001E-02 0.062
2 0.5100802486E+04 0.2792678126E-03 0.2358347288E-02 0.047

Info: Program skipped over iterations due to rigid mode.

UPDATED TIME = 50.000000
TIME INCREMENT = 0.500000

TOTAL CPU TIME UP TO THIS STEP = 26.8870 (sec)
SUBTOTAL CPU TIME OF THIS STEP = 0.2650 (sec)

RESULT I/O 0.0470

CPU FOR DEFORMATION CALCULATIONS (sec)
INTERFACE GENERATION 0.0000 1
EQ. INDEXING PREPERATION 0.0000 0
STIFFNESS MATRIX GENERATION 0.0630 2
BOUNDARY CONDITION CAL. 0.0000 2
EQUATION SOLVING 0.1090 2
CONTACT TIME CALCULATION 0.0630 1
MESH CHECKS 0.0000 1
INSIDE/OUTSIDE CHECK 0.0000 0

NORMAL STOP: The assigned steps have been completed.
    
```

Auto update

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