Egenfrekvensanalys med Salome och calculix

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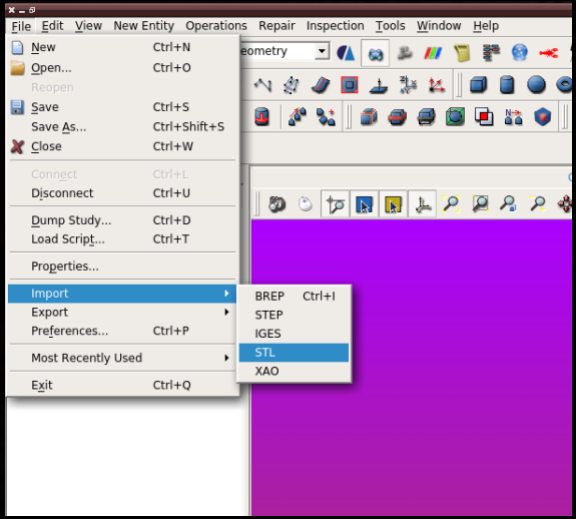
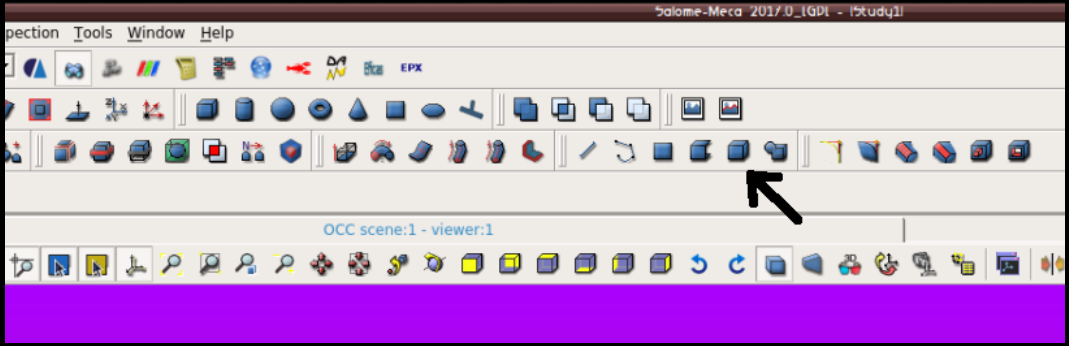
Har geometrin - Importera till salome



Import av geometri

konvertera till solid

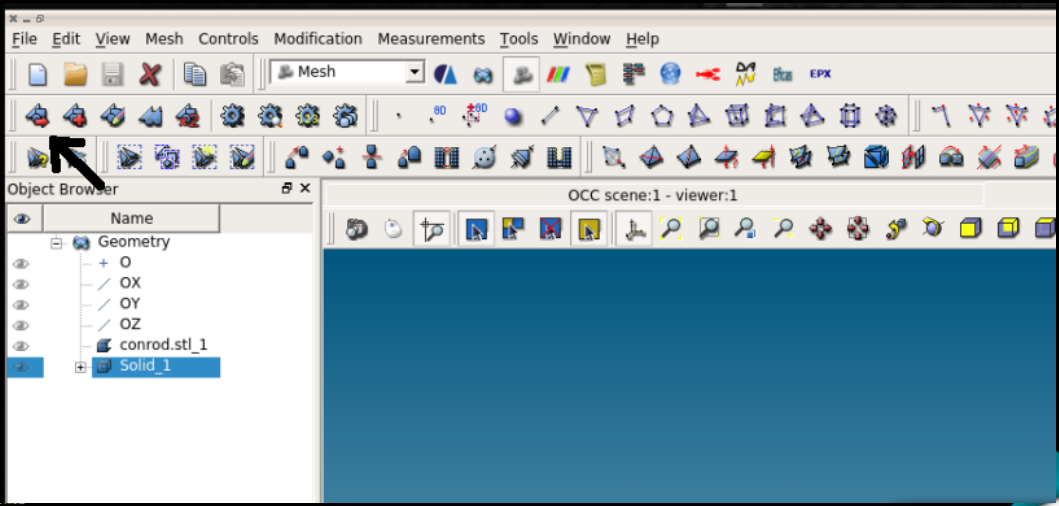
STL är en yta, för att kunna 3D-mesha behövs en solid:



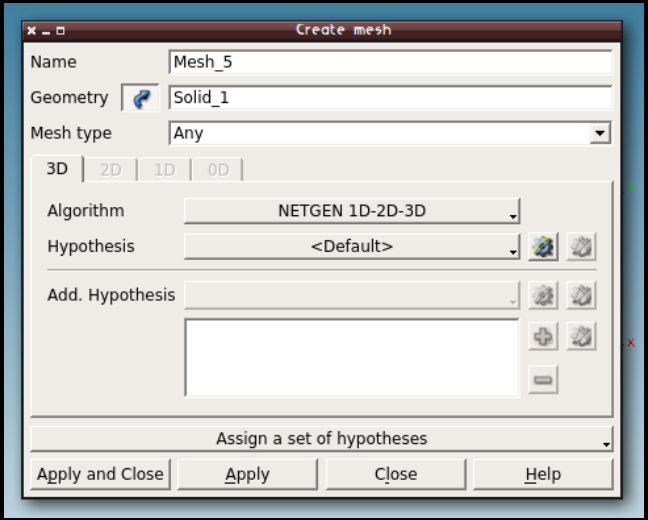
Skapande av solid

Så meshning

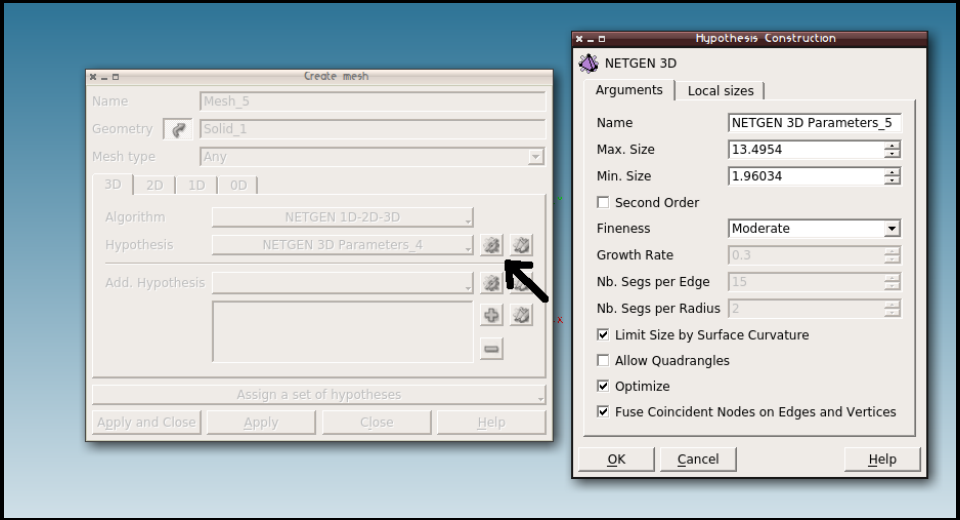
Över i mesh modulen och börja mesha



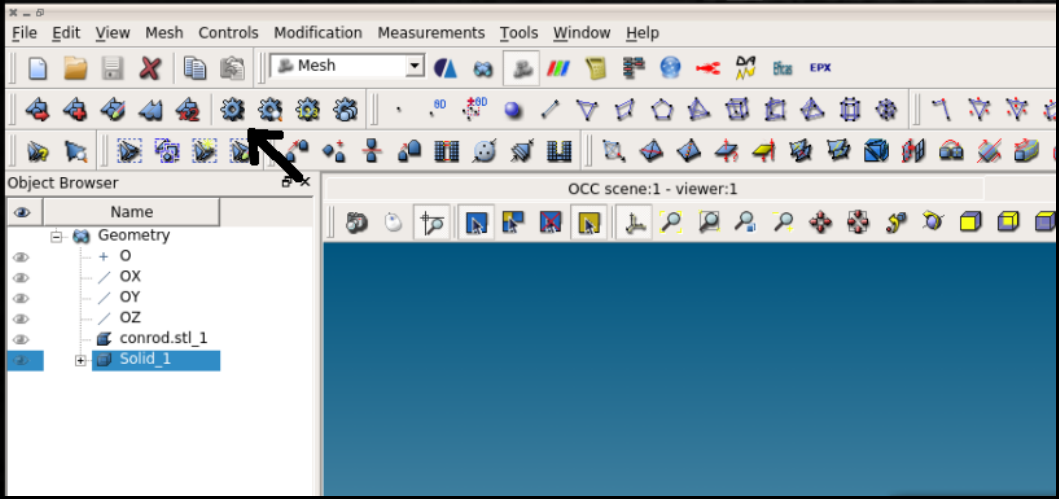
Välj solid


Create mesh
Name
Mesh_5
Geometry
Solid_1
Mesh type
Any
3D
2D
1D
0D
Algorithm
NETGEN 1D-2D-3D
Hypothesis
<Default>
Add. Hypothesis
Assign a set of hypotheses
Apply and Close
Apply
Close
Help

Netgen behöver parametrar



Skapa meshet



Exportera mesh

- UNV för att konvertera senare
- eller:

```
>>>execfile(r"/home/niclas/src/SalomeToCalculix/SalometoCalculix.py")
```

Gör en input-fil till ccx

```
*Heading
**
*INCLUDE, INPUT=meshcal2.inp
**
** MATERIALS
**
*Material, name=Mat
*Density
 7.8e-09,
*Elastic
210000., 0.3
*SOLID SECTION,MATERIAL=MAT,ELSET=C3D10
**
** STEP: cycle
**
*Step, perturbation
*Frequency
30
*NODE FILE
U
*EL FILE
S
*END STEP
```

Kör sim

```
$: ccx inputfil
```

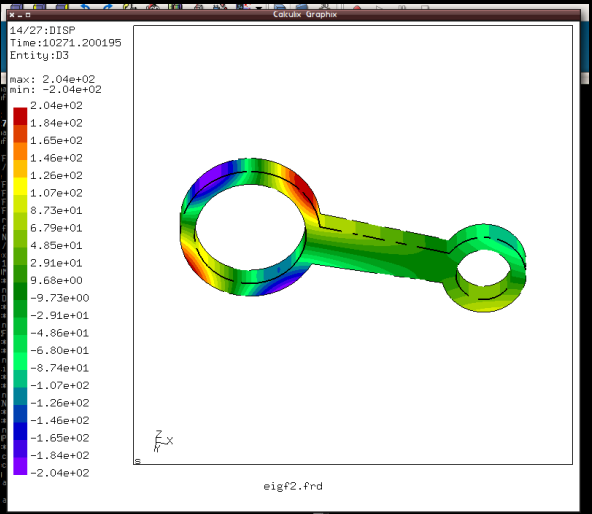
Kolla dat-fil

MODE NO	EIGENVALUE	FREQUENCY		
		REAL PART		IMAGINARY PART
		(RAD/TIME)	(CYCLES/TIME	(RAD/TIME)
1	-0.1438755E-02	0.0000000E+00	0.0000000E+00	0.3793092E-01
2	-0.4535929E-03	0.0000000E+00	0.0000000E+00	0.2129772E-01
3	-0.2640621E-03	0.0000000E+00	0.0000000E+00	0.1624999E-01
4	-0.2478882E-04	0.0000000E+00	0.0000000E+00	0.4978837E-02
5	0.2998733E-03	0.1731685E-01	0.2756062E-02	0.0000000E+00
6	0.4849564E-03	0.2202173E-01	0.3504866E-02	0.0000000E+00
7	0.2270311E+09	0.1506755E+05	0.2398075E+04	0.0000000E+00
8	0.2649968E+09	0.1627872E+05	0.2590839E+04	0.0000000E+00
9	0.1003054E+10	0.3167103E+05	0.5040600E+04	0.0000000E+00
10	0.1004005E+10	0.3168604E+05	0.5042990E+04	0.0000000E+00
11	0.1430309E+10	0.3781942E+05	0.6019148E+04	0.0000000E+00
12	0.1814849E+10	0.4260105E+05	0.6780168E+04	0.0000000E+00
13	0.3361090E+10	0.5797490E+05	0.9226993E+04	0.0000000E+00
14	0.4205204E+10	0.6484754E+05	0.1032081E+05	0.0000000E+00
15	0.4374527E+10	0.6614021E+05	0.1052654E+05	0.0000000E+00
16	0.7645418E+10	0.8743808E+05	0.1391620E+05	0.0000000E+00
17	0.1067993E+11	0.1033438E+06	0.1644767E+05	0.0000000E+00
18	0.1081857E+11	0.1040124E+06	0.1655408E+05	0.0000000E+00
19	0.1424225E+11	0.1193409E+06	0.1899370E+05	0.0000000E+00

Kolla med CGX

```
$: cgx inputfil.frd
```

Typisk bild


Calculix Graphix
14/27:DISP
Time:10271.200195
Entity:D3
max: 2.04e+02
min: -2.04e+02
2.04e+02
1.84e+02
1.65e+02
1.46e+02
1.26e+02
1.07e+02
8.73e+01
6.79e+01
4.85e+01
2.91e+01
9.68e+00
-9.73e+00
-2.91e+01
-4.86e+01
-6.80e+01
-8.74e+01
-1.07e+02
-1.26e+02
-1.46e+02
-1.65e+02
-1.84e+02
-2.04e+02
eigf2.frd