

PPU108

Datorverktyg 1

- Kursmomentet: INL2
- Översikt analysverktyg CAD
- SolidWorks Motion
- Excel

Övningsfiler:

P:\Courses\P\PPU108\Course material\Datorverktyg

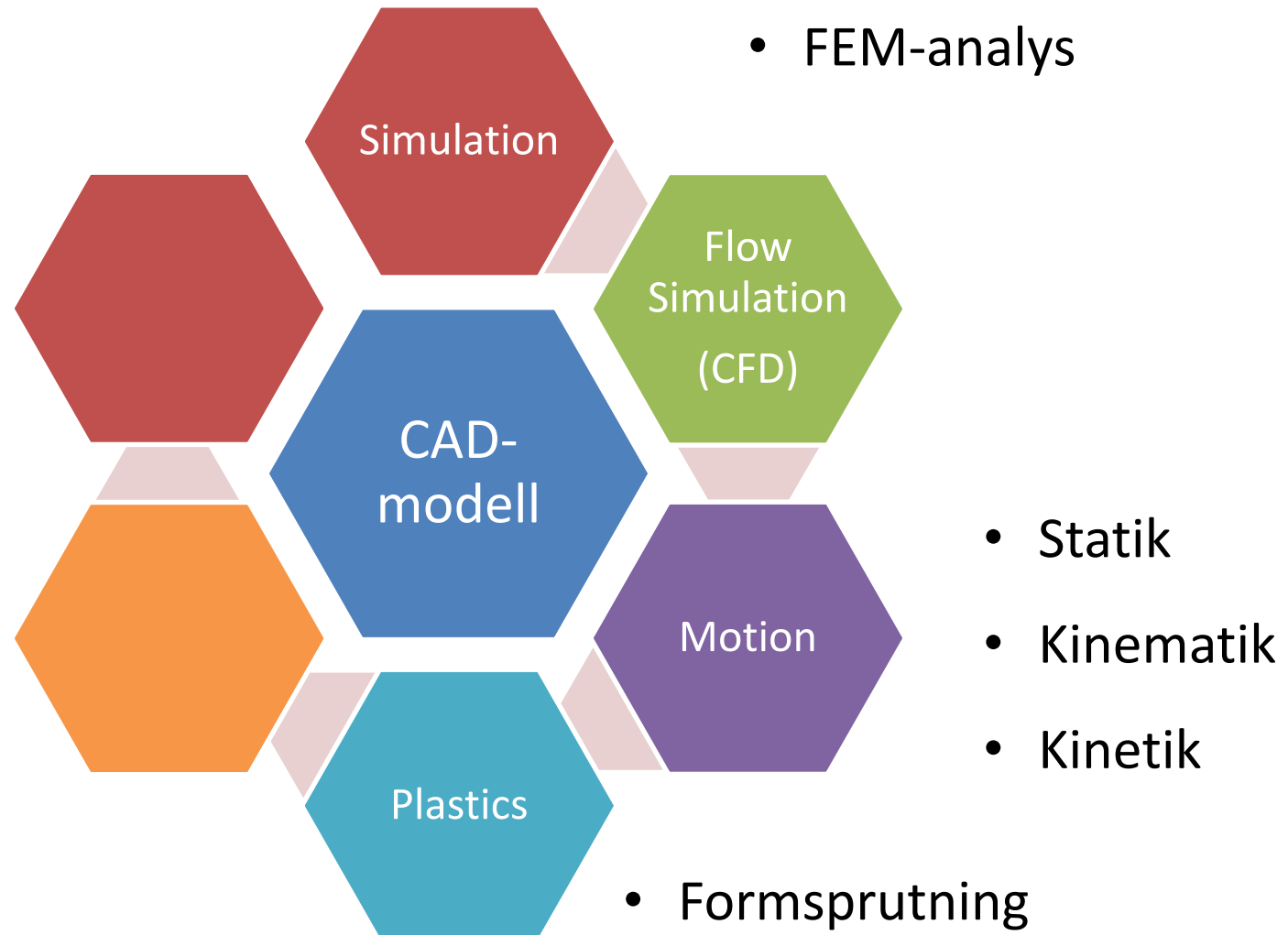
Kursmoment INL2

- 1,5 hp
- Motsvarar ca 40 timmar

Inlämningar

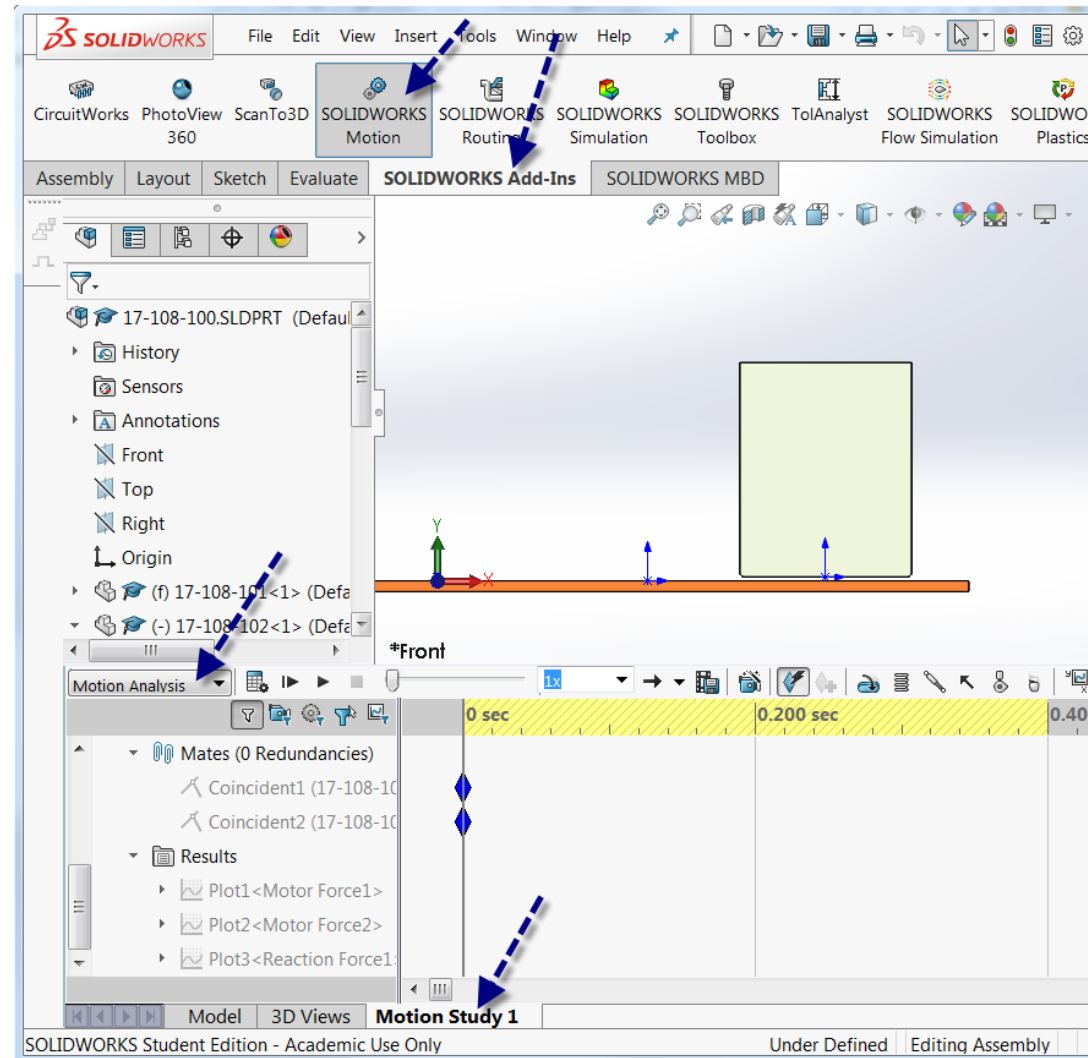
- 2A: Masscentrum, Tisdag 20 februari
- 2B: Friktion, Tisdag 27 februari

Några analysverktyg (SolidWorks)



Motion add-in

- Aktivera add-in
- Byt till Motion Study
- Motion analysis



Motion add-in

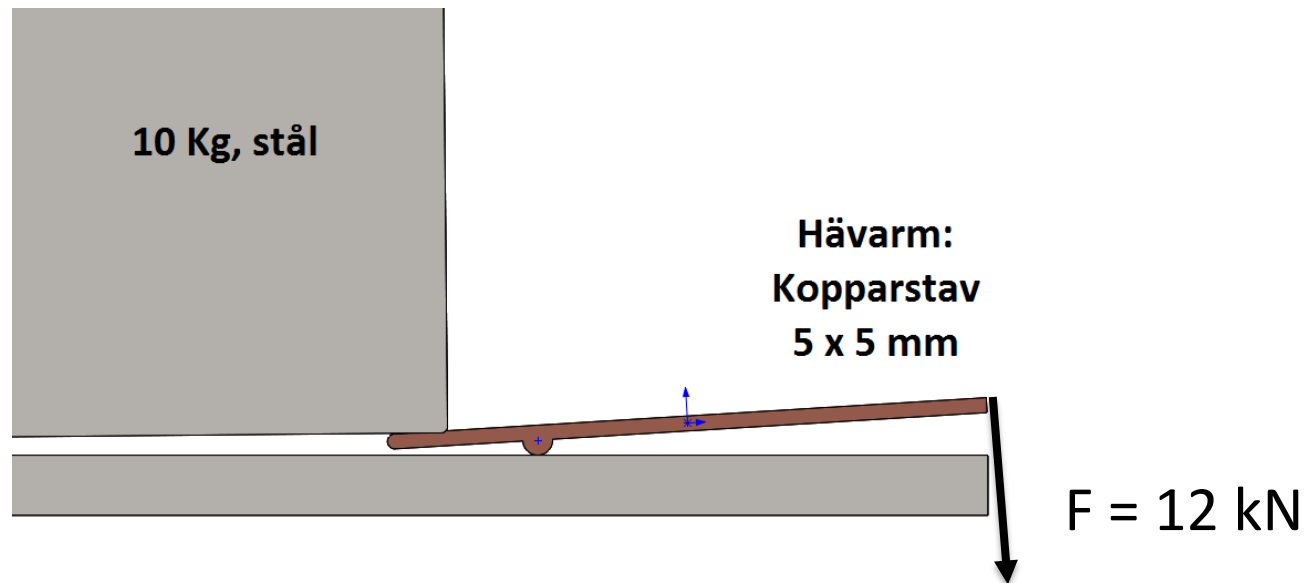
The image shows a screenshot of the Motion Analysis software interface. The top part of the image features a toolbar with several icons, each labeled with a Swedish word: **Motor**, **Fjäder** (Spring), **Stötdämpare** (Damper), **Kraft** (Force), **Kontakt** (Contact), **Gravitation** (Gravity), **Diagram**, and **Inställningar** (Settings). Below this, a timeline is shown with a yellow highlighted section from 0 sec to 0.400 sec. The timeline has a **Start** label at the beginning and a **Slut** (End) label at the 0.400 sec mark. A **Nyckel, "Key"** label points to a blue diamond marker on the timeline. A **Zoom** label points to a zoom control icon at the bottom right. On the left side, there is a **Beräkna** (Calculate) button and a **Tidslinje** (Timeline) label. A **Hastighet** (Velocity) label points to a dropdown menu in the toolbar. The software interface includes a tree view on the left with items like **17-108-100.SLDPRT**, **Orientation and Camera Vi**, **Lights, Cameras and Scene**, **LinearMotor1**, **Gravity**, **Solid Body Contact1**, and **(f) 17-108-101<1> (Default**. The bottom status bar shows **Model**, **3D Views**, and **Motion Study 1**.

Stelkropssimulering

- En förenkling av verkligheten
- Helt stela kroppar
- ”Perfekta” situationer – ytor, krafter...
- Rimliga resultat? Reality check.
- Börja med enkla modeller - kontrollräkna

Stelkropssimulering

Exempel: Orimlig situation

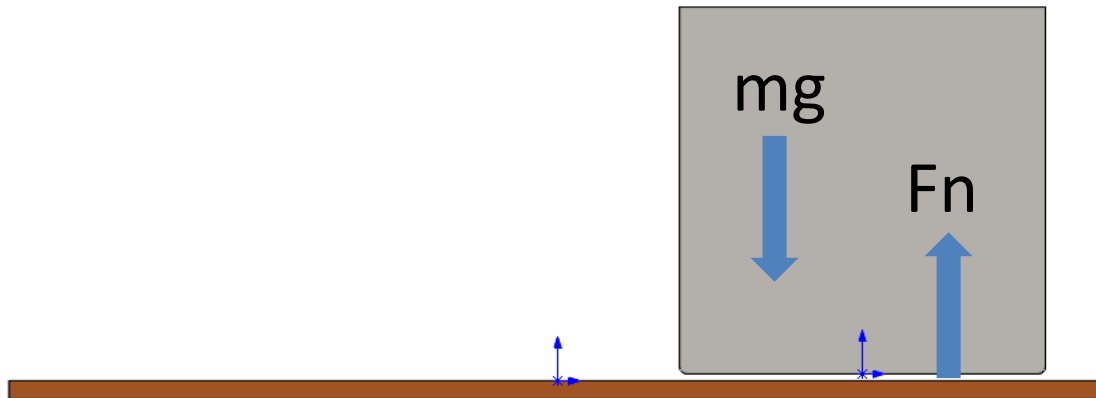


Går utmärkt att simulera

Skulle aldrig fungera i verkligheten

Övning 1

Kloss på platta

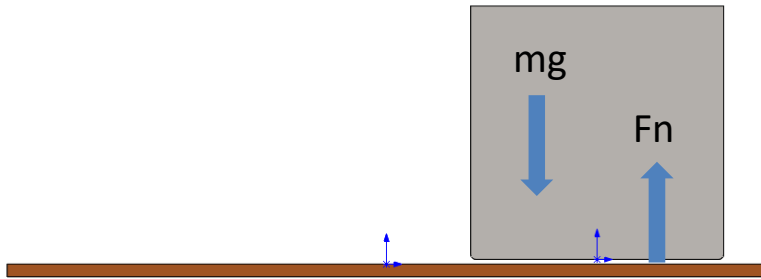


Hur får vi reda
på massan?

Förväntat resultat?

Övning 1

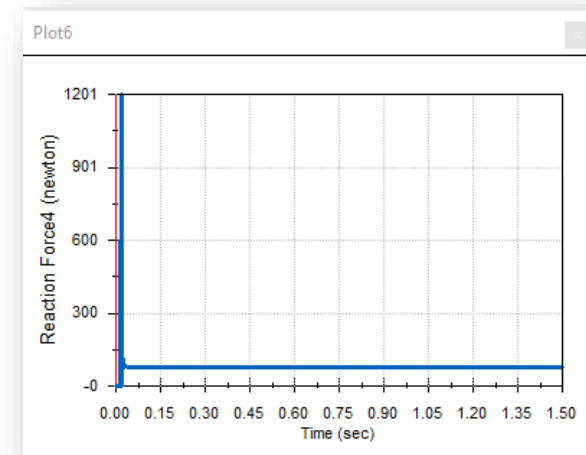
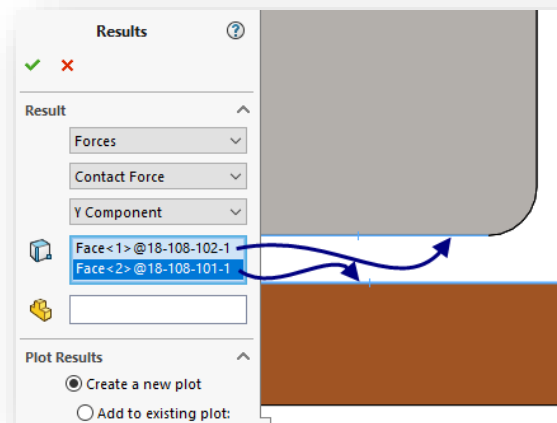
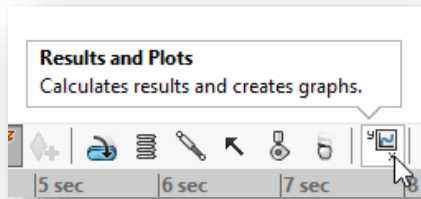
Kloss på platta



Vad behövs?

- Gravitation
- Kontaktvillkor

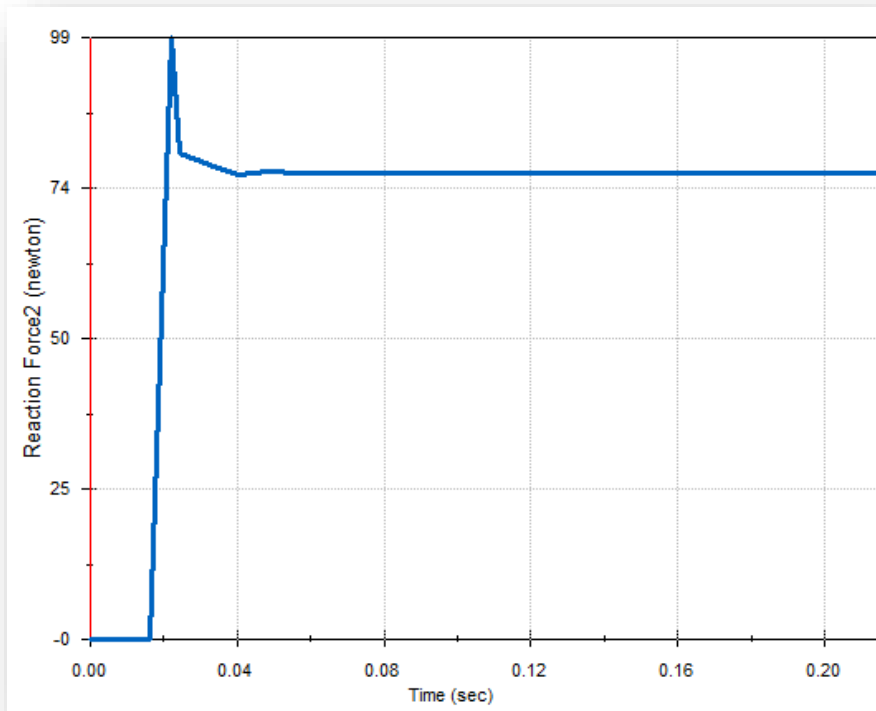
Skapa diagram:



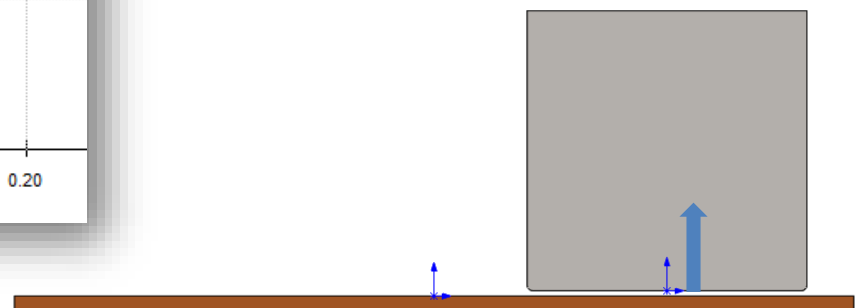
Diagram

Justering av diagrammets axlar:

Dubbelklicka på axeln



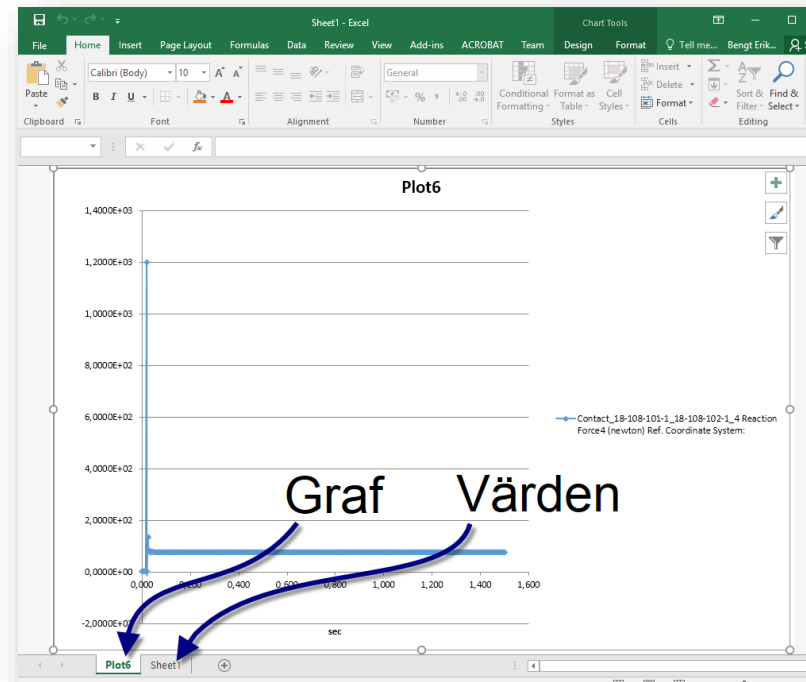
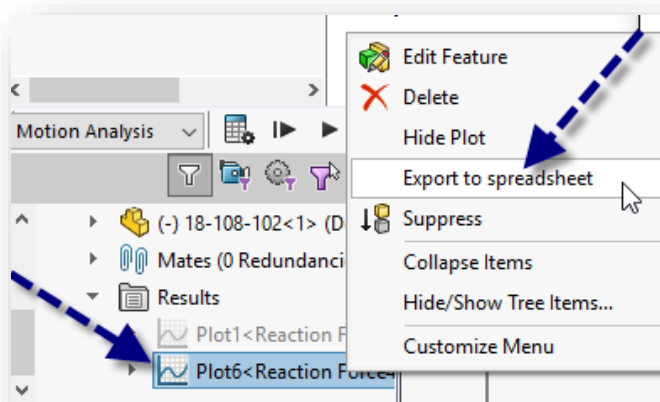
Normalkraft



Excel

Exportera värden till Excel

- Se till att diagrammet syns
- Högerklicka > Välj "Export to spreadsheet"

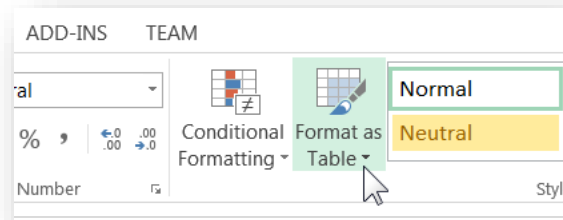


Excel

Städa; formatering, decimaler, rubriker...

The screenshot shows the Excel Home ribbon with the font section expanded. The font is set to Calibri. Below the ribbon, a data table is visible with columns A and B highlighted. The table contains the following data:

	A	B	C
1	Plot3		
2	Time (sec)	Reaction Force3 (newton)	
3	0	0	
4	0,01	0	
5	0,01876	0	
6	0,02	190,1981	
7	0,03	155,0101	
8	0,04	76,41316	
9	0,05	76,4289	
10	0,06	76,45477	
11	0,07	76,45453	
12	0,08	76,4613	



The screenshot shows the Excel Home ribbon with the font section expanded. The font is set to Calibri. Below the ribbon, a data table is visible with columns A and B highlighted. The table contains the following data:

	A	B
1		
2	Tid (s)	Reaktionskraft (N)
3	0,000	0,0
4	0,010	0,0
5	0,019	0,0
6	0,020	190,2
7	0,030	155,0
8	0,040	76,4
9	0,050	76,4
10	0,060	76,5
11	0,070	76,5
12	0,080	76,5

FRÅGOR