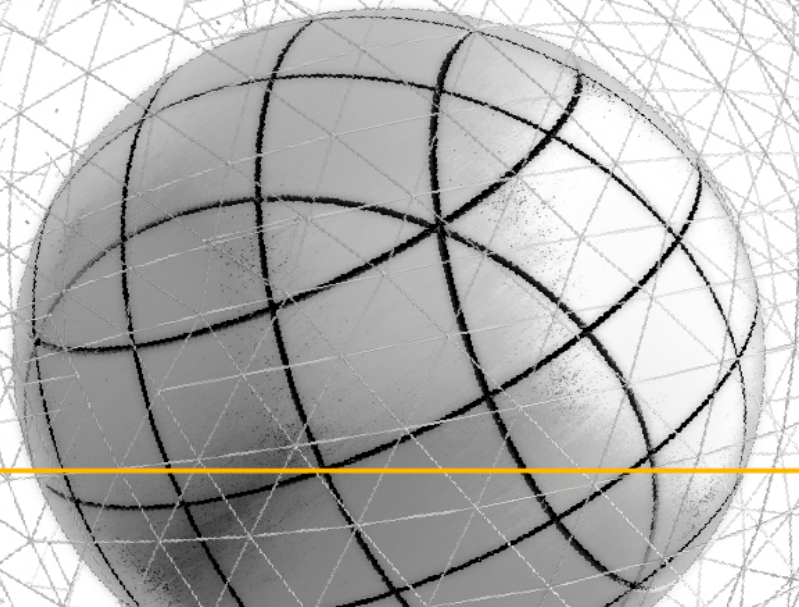
MIDAS

MIDAS MESH FREE

線性結構_底座結構強度分析

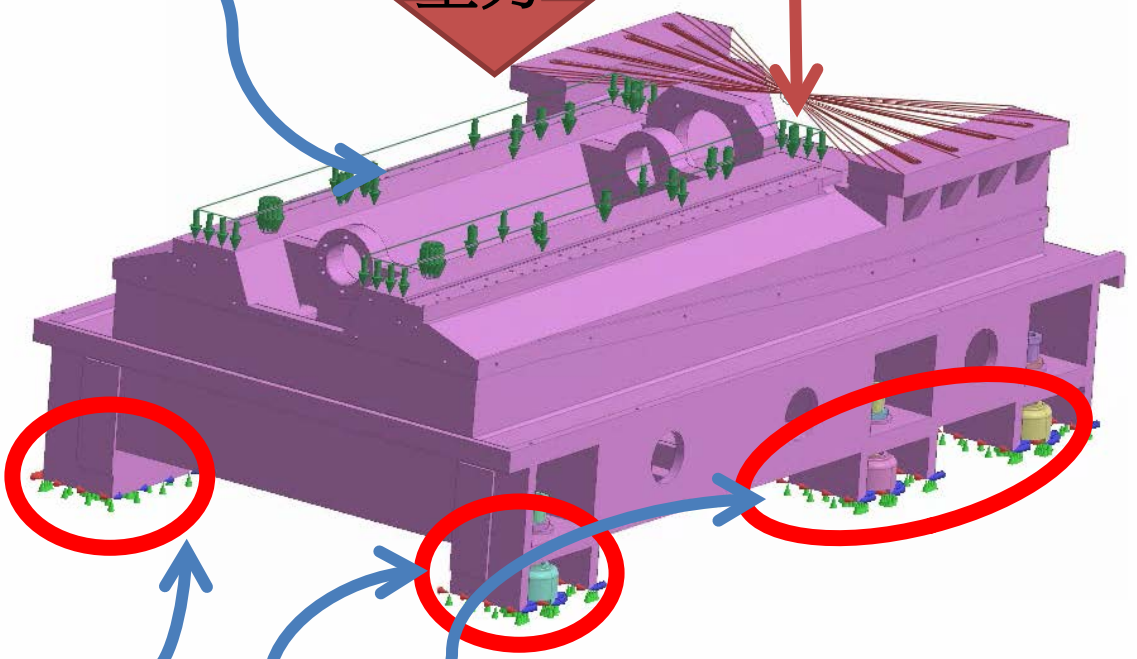


Simple, but Everything.

滑軌均壓:20 Nt/mm^2

立柱重假設:500Kg

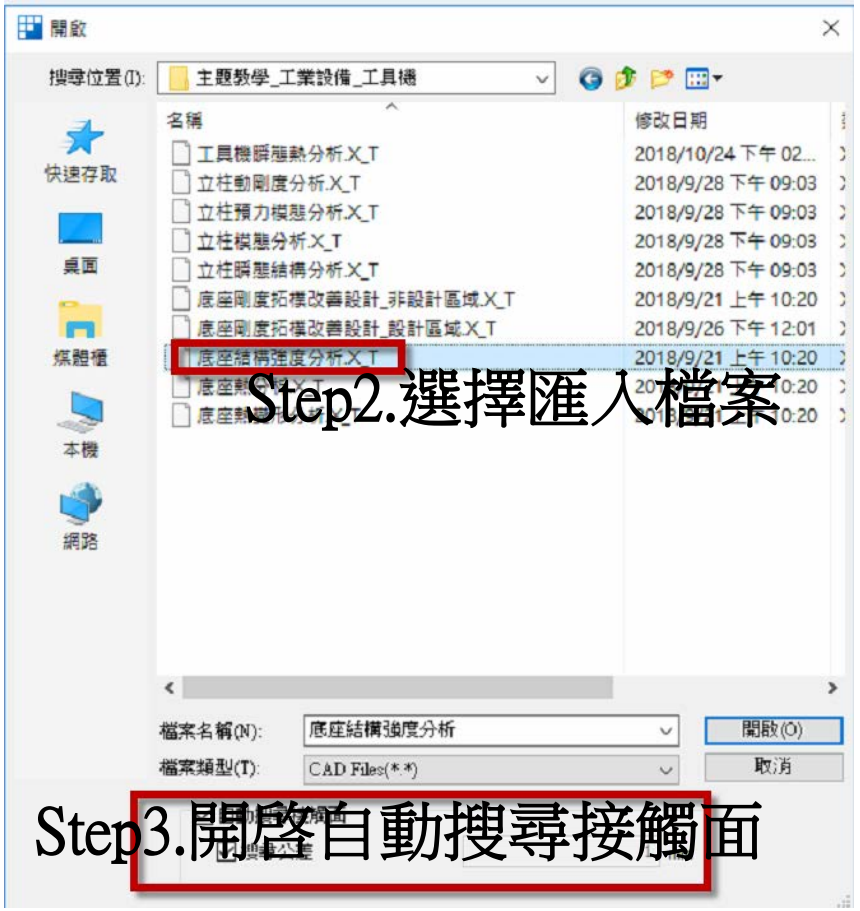
重力



固定X,Y,Z

材料: Alloy Steel

Step1.匯入3D 模型



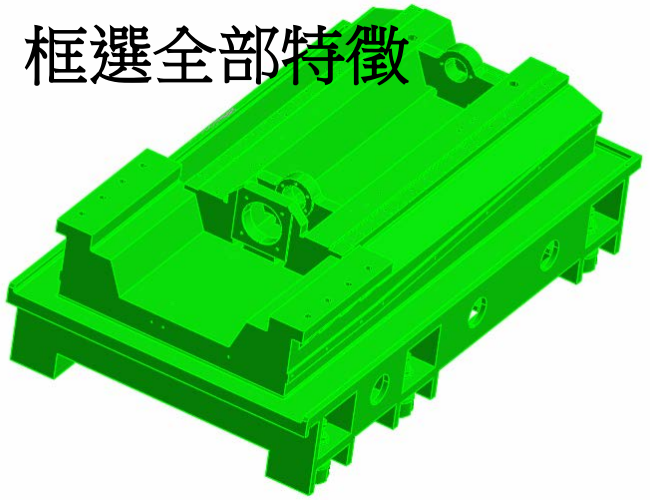
Step2.選擇匯入檔案

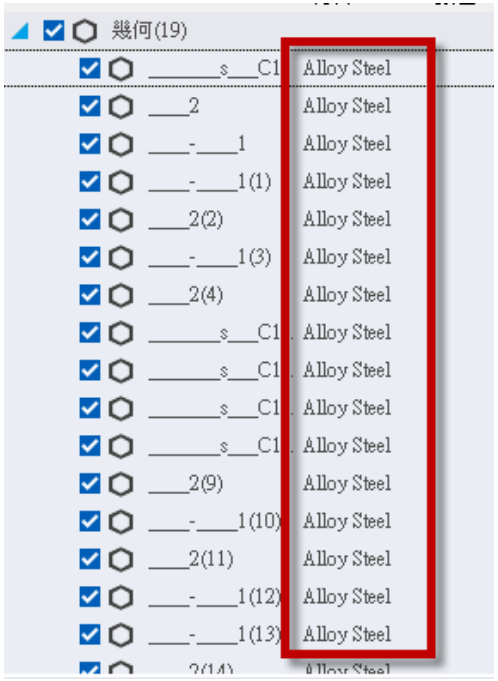
Step3.開啟自動搜尋接觸面

MeshFree支援各類CAD 格式

Parasolid (9 - 29) Files (*.x_t;*.xmt_txt;*.x_b;*.xmt_bin)
ACIS (R1 - 2017 1.0) Files (*.sat;*.sab;*.asat;*.asab)
STEP (AP203, AP214, AP242) Files (*.stp;*.step)
IGES (Up to 5.3) Files (*.igs;*.iges)
Pro-E (16 - Creo 3.0) Files (*.prt;*.prt.*;*.asm;*.asm.*)
CATIA V4 (CATIA 4.1.9 - 4.2.4) Files (*.model;*.exp;*.session)
CATIA V5 (V5R8 - V5-6R2016) Files (*.CATPart;*.CATProduct)
Solid Works (98 - 2017) Files (*.sldprt;*.sldasm)
Unigraphics (11 - NX11) Files (*.prt)
Inventor Part (V6 - V2017) Files (*.ipt)
Inventor Assembly (V11 - V2017) Files (*.iam)
Solid Edge (V18 - ST9) Files (*.par;*.asm;*.psm)

框選全部特徵

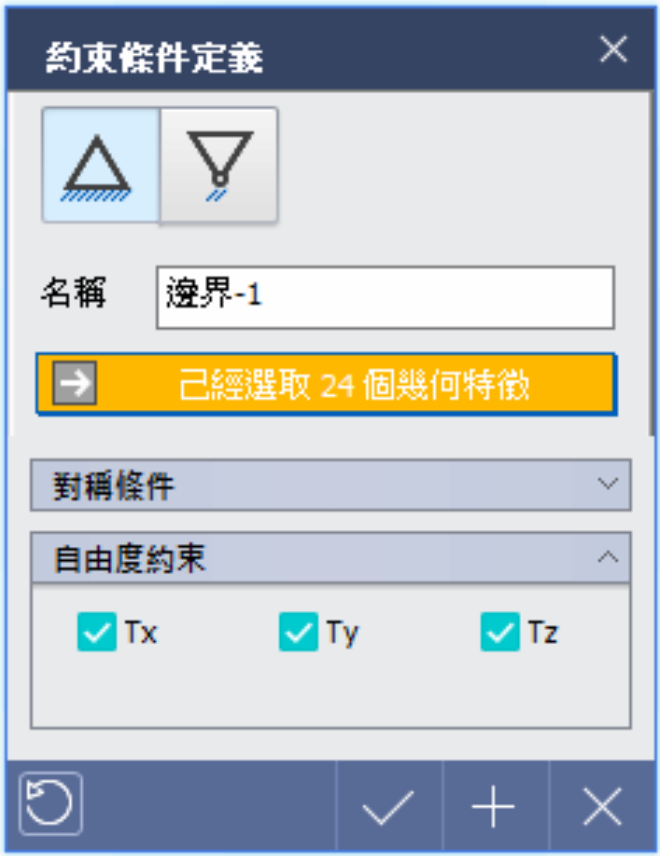




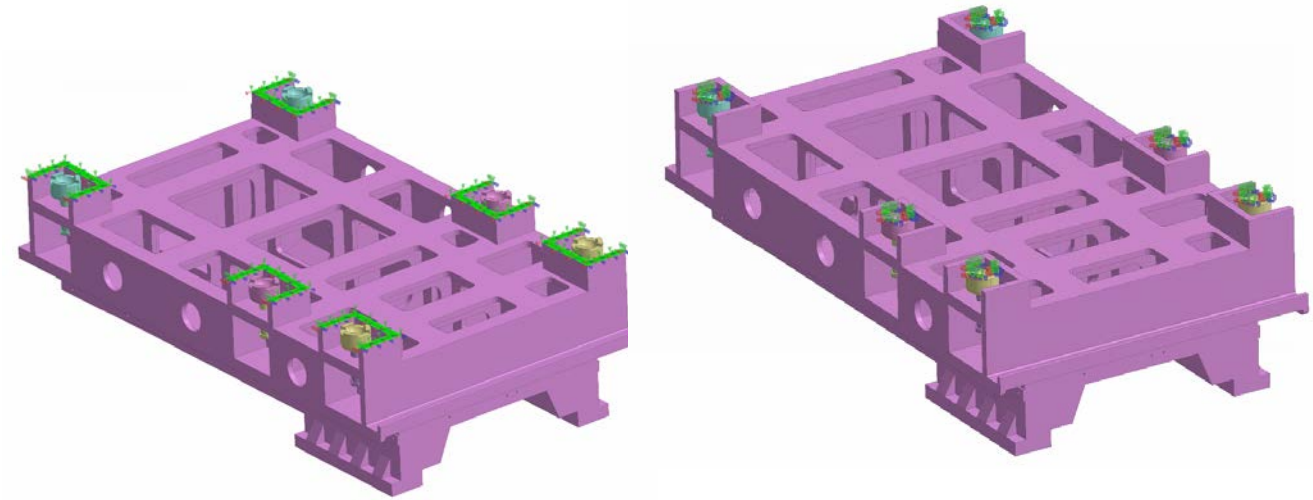
滑鼠右鍵,材料定義

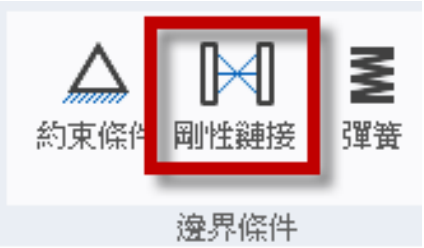
模型樹會顯示指定的材料

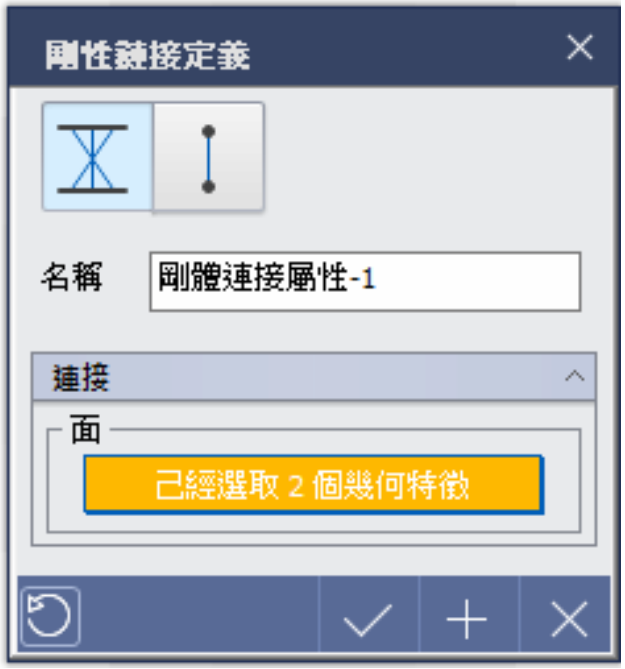

分析條件
約束條件
剛性鏈接
彈簧
邊界條件


約束條件定義
名稱
邊界-1
已經選取 24 個幾何特徵
對稱條件
自由度約束
Tx
Ty
Tz

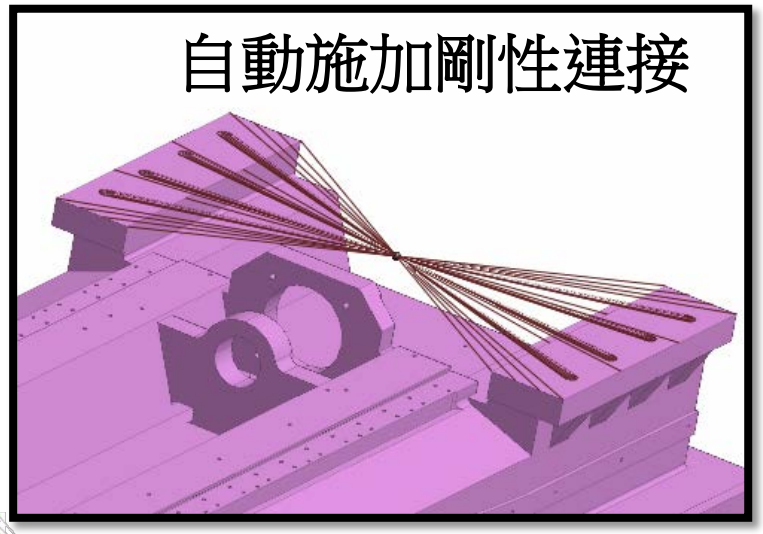
選取拘束底面特徵

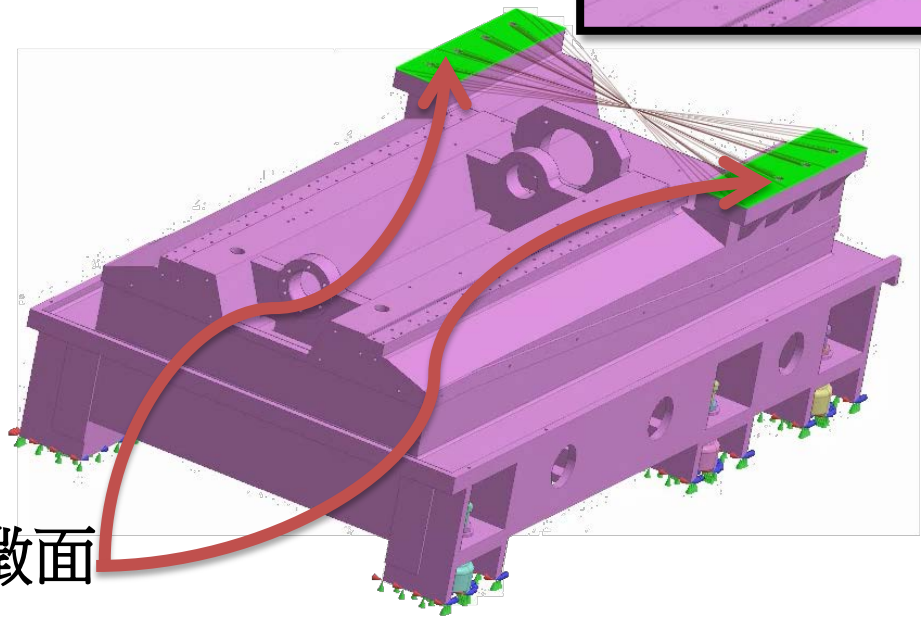




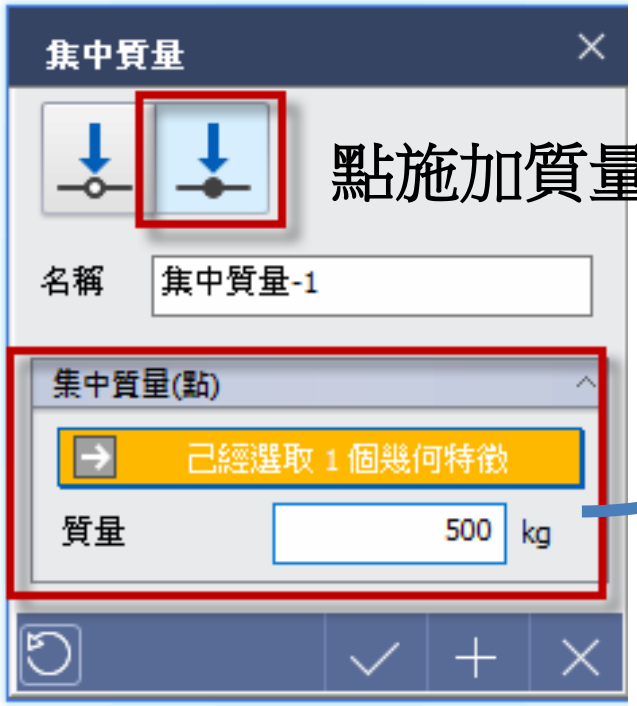


自動施加剛性連接



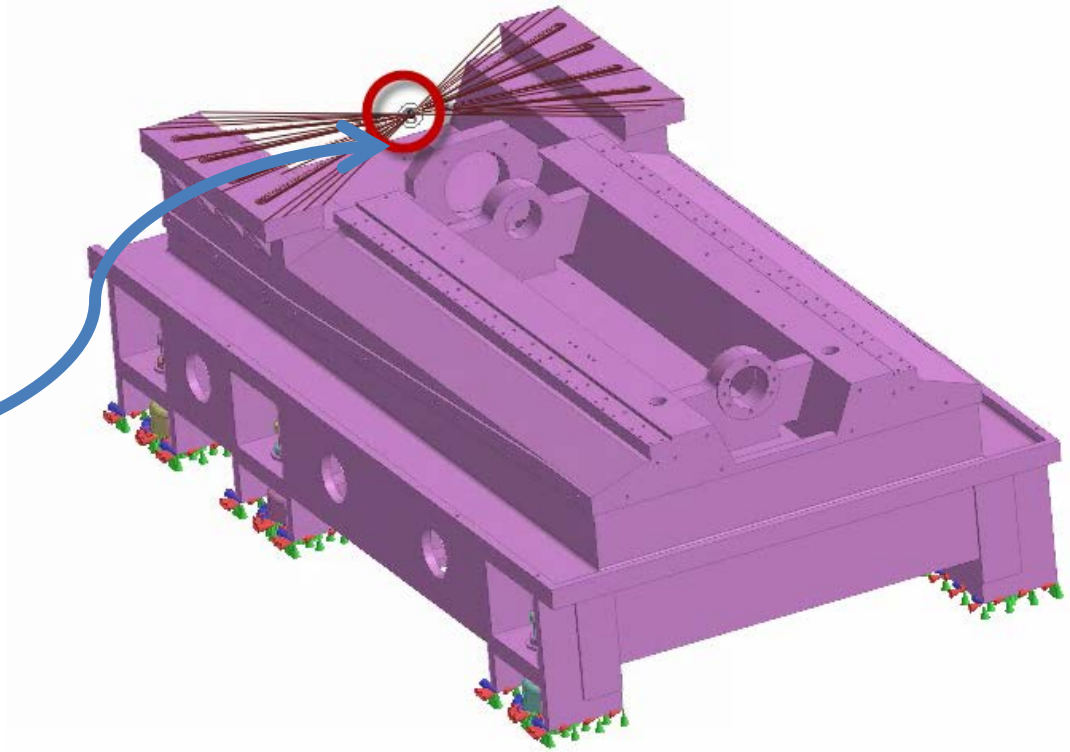


選取立柱鎖附位置特徵面

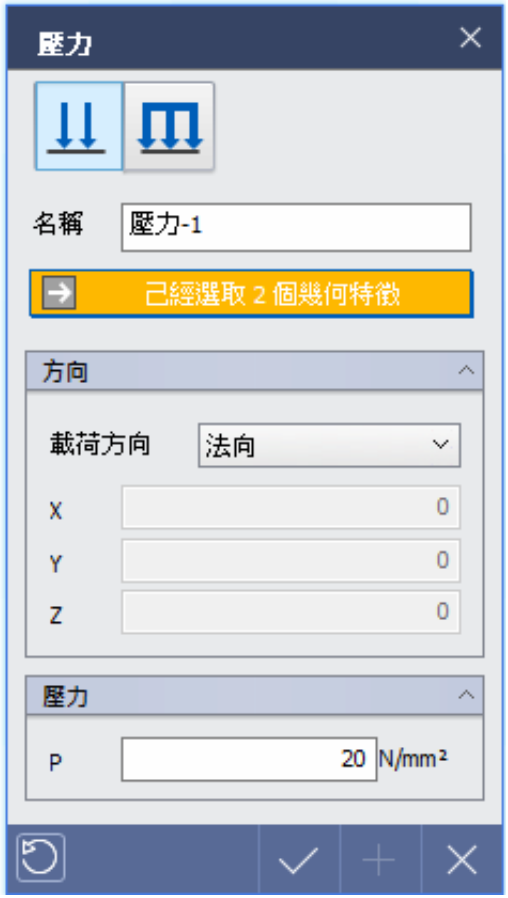


點施加質量

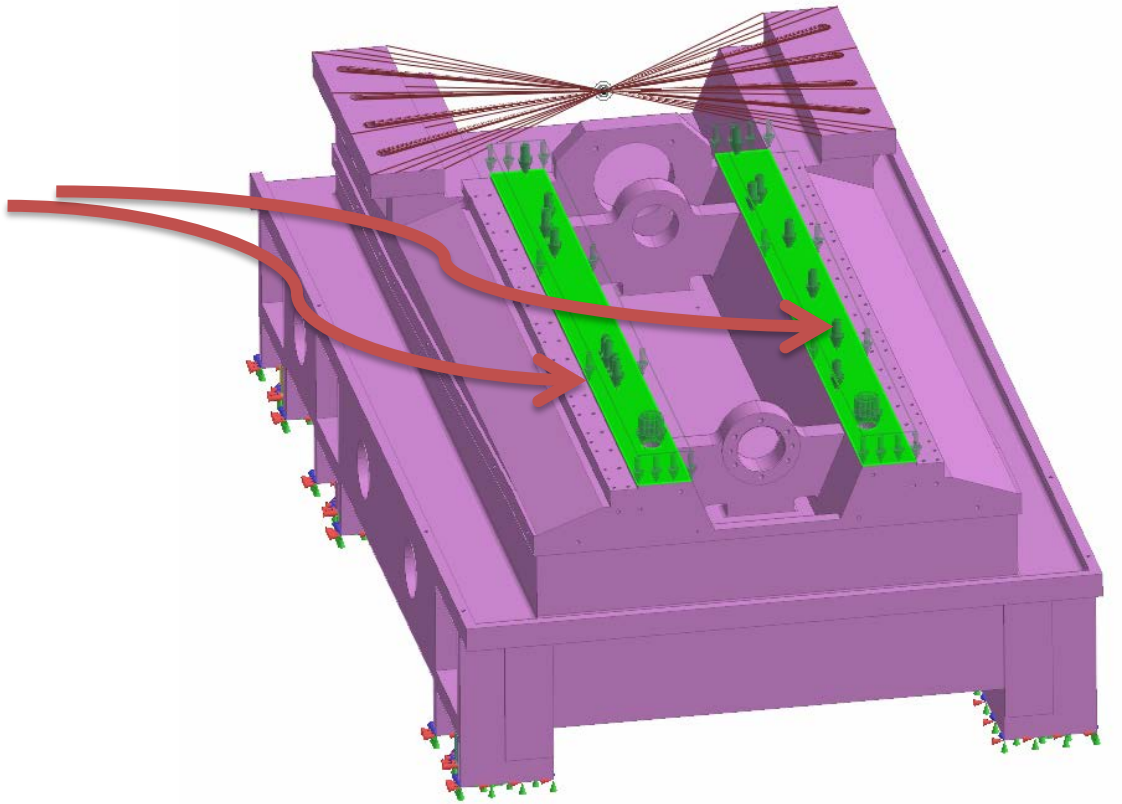
施加在剛性連接中間點



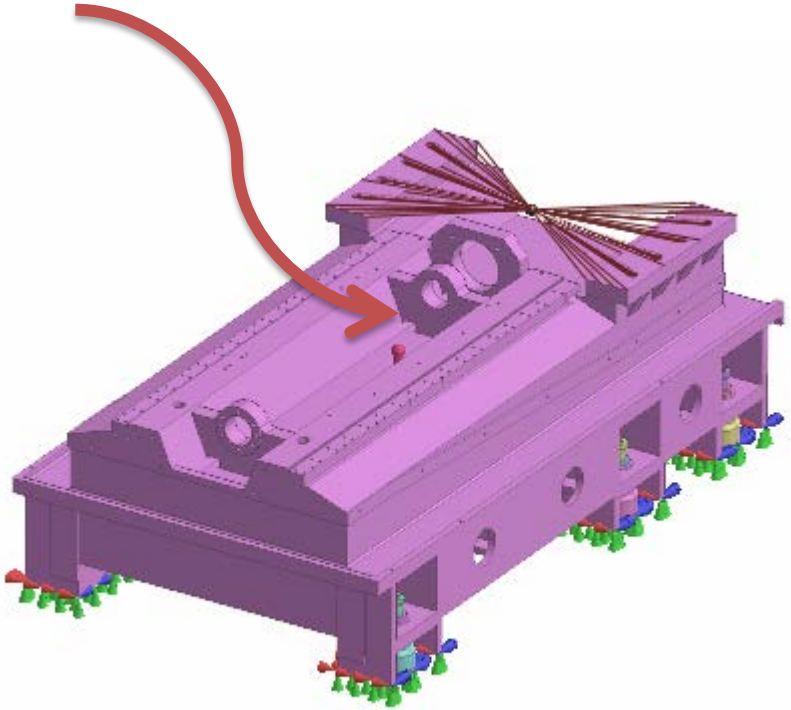

重力
力
集中質量
壓力
扭矩
離心力
位移
初始溫度
結構-溫度
載荷


壓力
名稱
壓力-1
已經選取 2 個幾何特徵
方向
載荷方向
法向
X
0
Y
0
Z
0
壓力
P
20
N/mm²

選擇滑軌特徵面

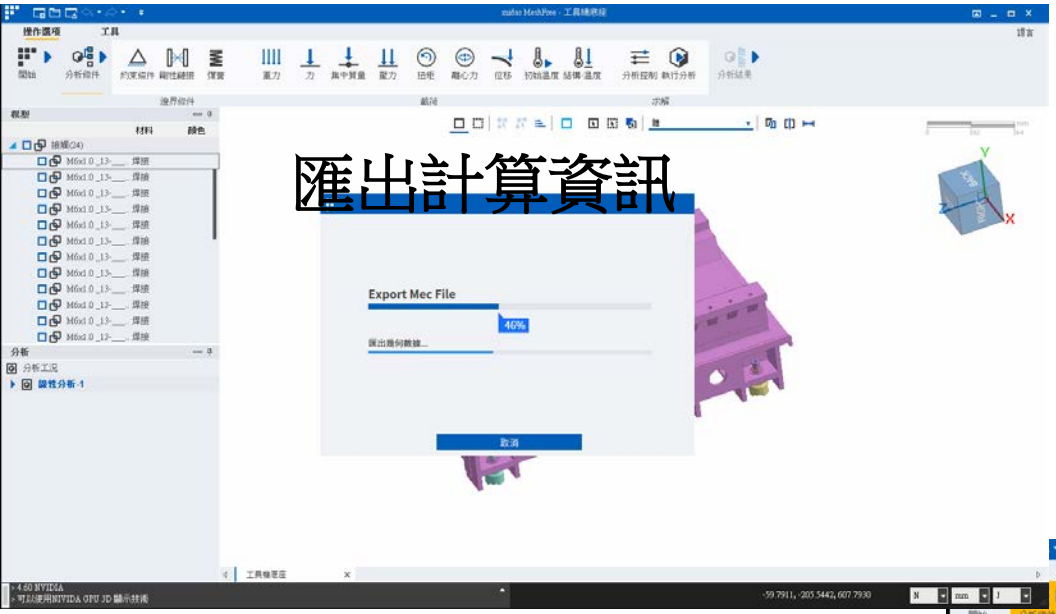


新增重力,視窗會顯示重力方向箭頭



記憶體大小
1.計算速度
2.分析準確性

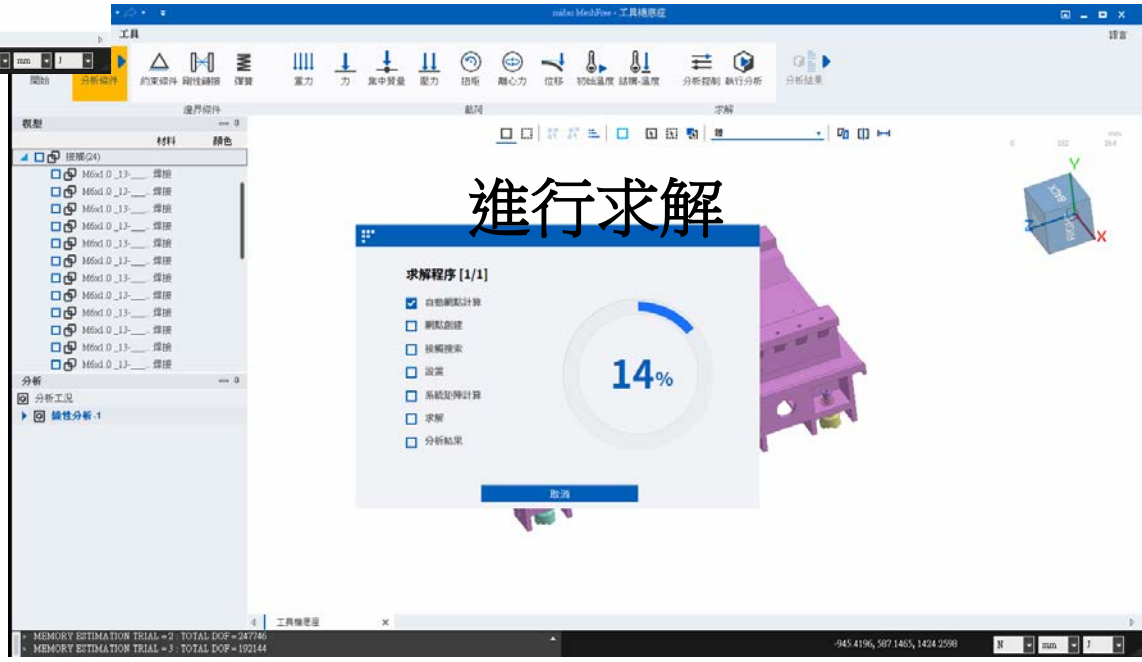
匯出計算資訊

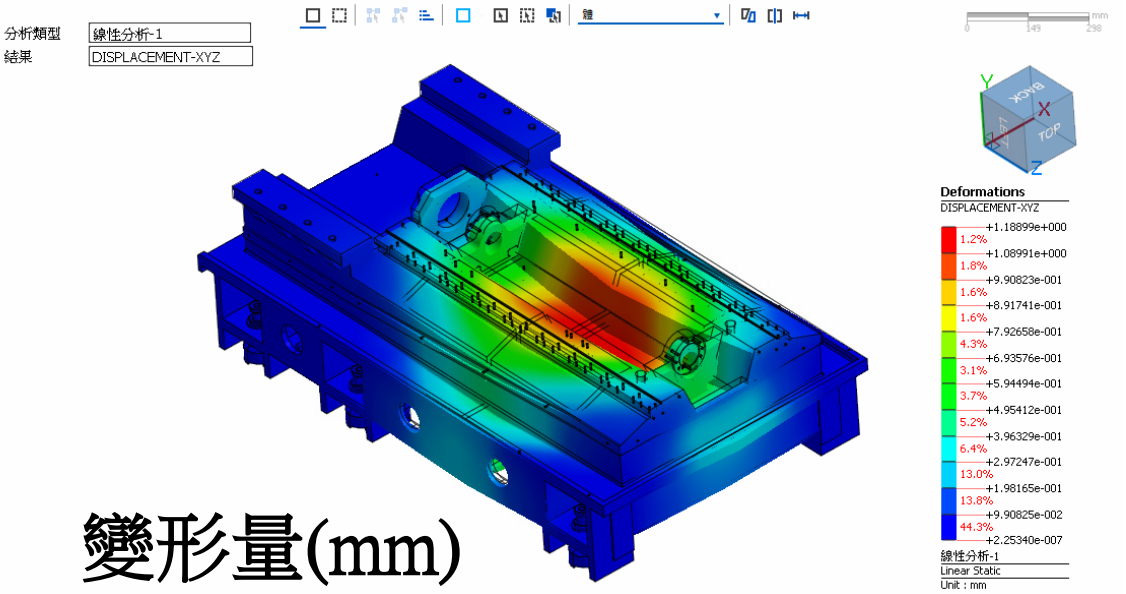


分析時間21.338sec
(採2G Ram)

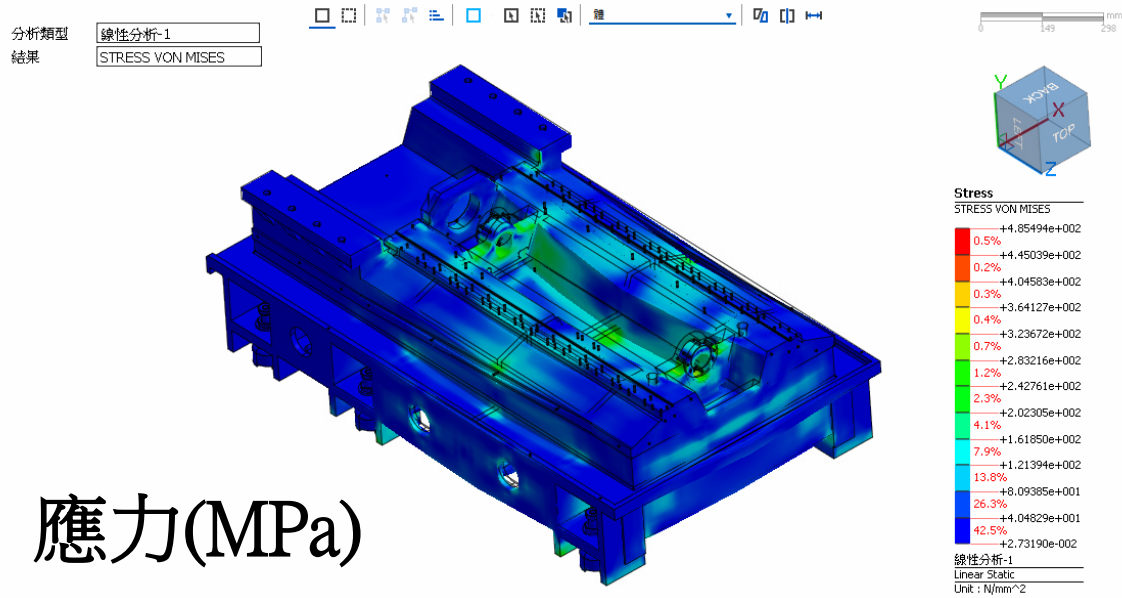
```
>    MAXIMUM TRANSLATION : -5.9349E+000(T2:177308), MAXIMU
> ANALYSIS WALL CLOCK TIME : 12.553 sec
> ANALYSIS COMPLETED
>
> [SYSTEM INFO]
> NUMBER OF THREADS    : 8
> MAXIMUM MEMORY USAGE : 2647 MB
> AVAILABLE MEMORY     : 25376 MB
> TOTAL CPU TIME       : 107.47 sec
> WALL CLOCK TIME      : 21.338 sec
> TOTAL WARNINGS : 0
```

進行求解




分析類型
線性分析-1
結果
DISPLACEMENT-XYZ
Deformations
DISPLACEMENT-XYZ
+1.18899e+000
1.2%
+1.08991e+000
1.8%
+9.90823e-001
1.6%
+8.91741e-001
1.6%
+7.92658e-001
4.3%
+6.93576e-001
3.1%
+5.94494e-001
3.7%
+4.95412e-001
5.2%
+3.96329e-001
6.4%
+2.97247e-001
13.0%
+1.98165e-001
13.8%
+9.90825e-002
44.3%
+2.25340e-007
線性分析-1
Linear Static
Unit : mm

變形量(mm)


分析類型
線性分析-1
結果
STRESS VON MISES
Stress
STRESS VON MISES
+4.85494e+002
0.5%
+4.45039e+002
0.2%
+4.04583e+002
0.3%
+3.64127e+002
0.4%
+3.23672e+002
0.7%
+2.83216e+002
1.2%
+2.42761e+002
2.3%
+2.02305e+002
4.1%
+1.61850e+002
7.9%
+1.21394e+002
13.8%
+8.09385e+001
26.3%
+4.04829e+001
42.5%
+2.73190e-002
線性分析-1
Linear Static
Unit : N/mm^2

應力(MPa)