

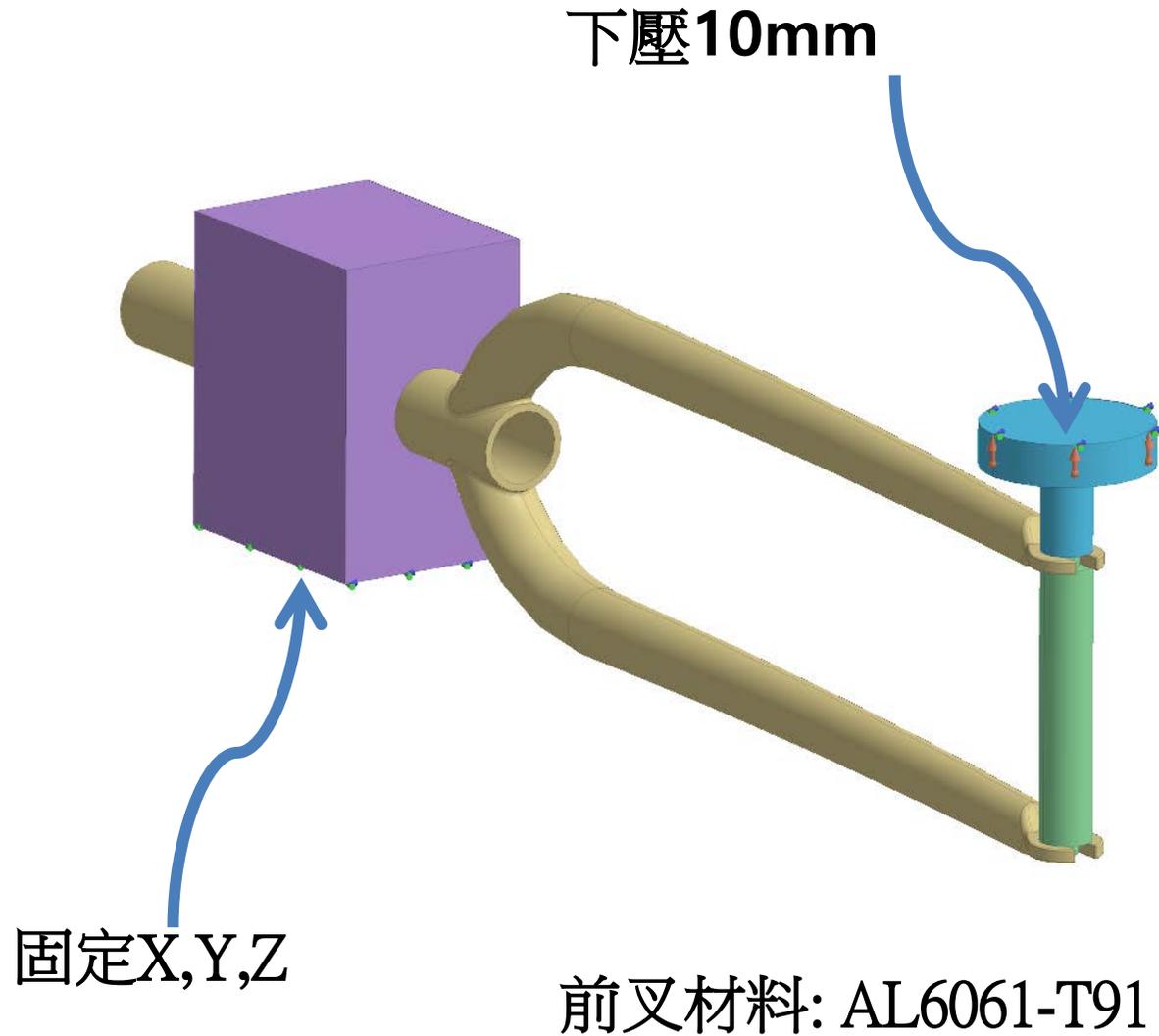


MIDAS

MESH FREE

前叉_側向剛性
(材料非線性/疲勞強度)

Simple, but Everything.

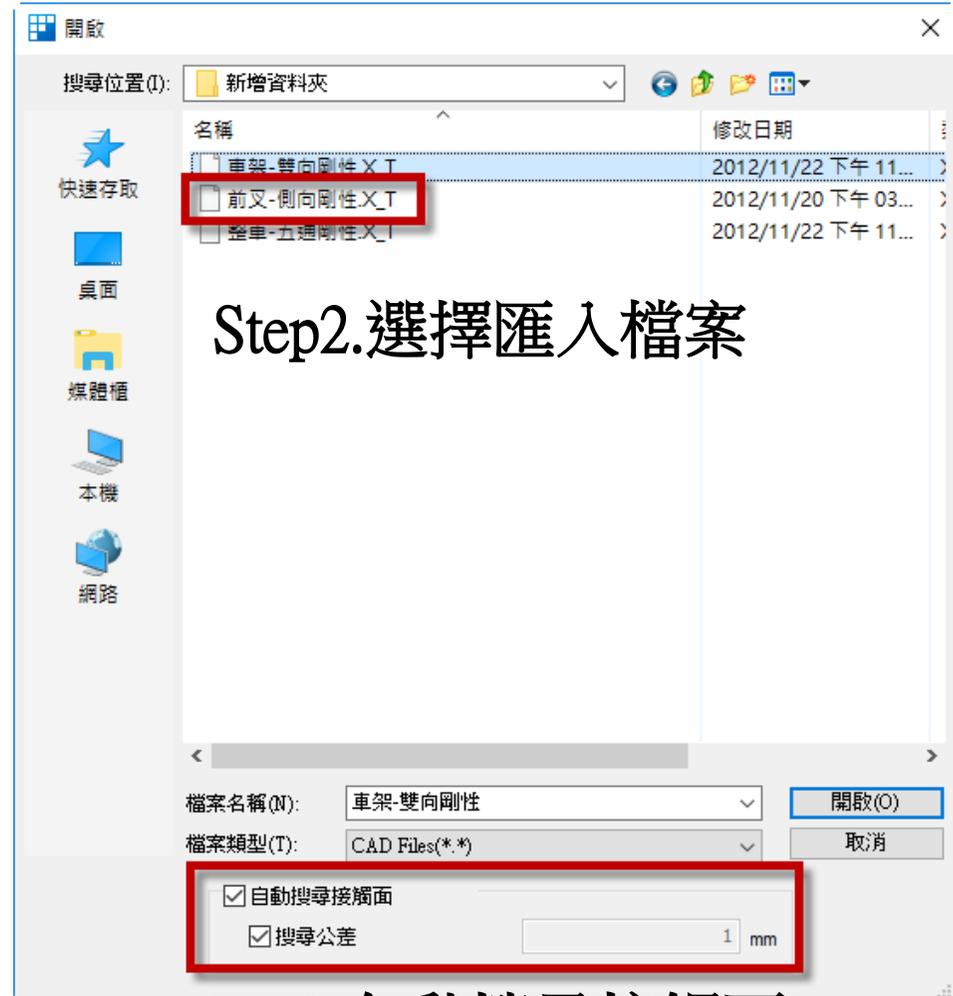




Step1.匯入3D 模型

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 - Cren 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)

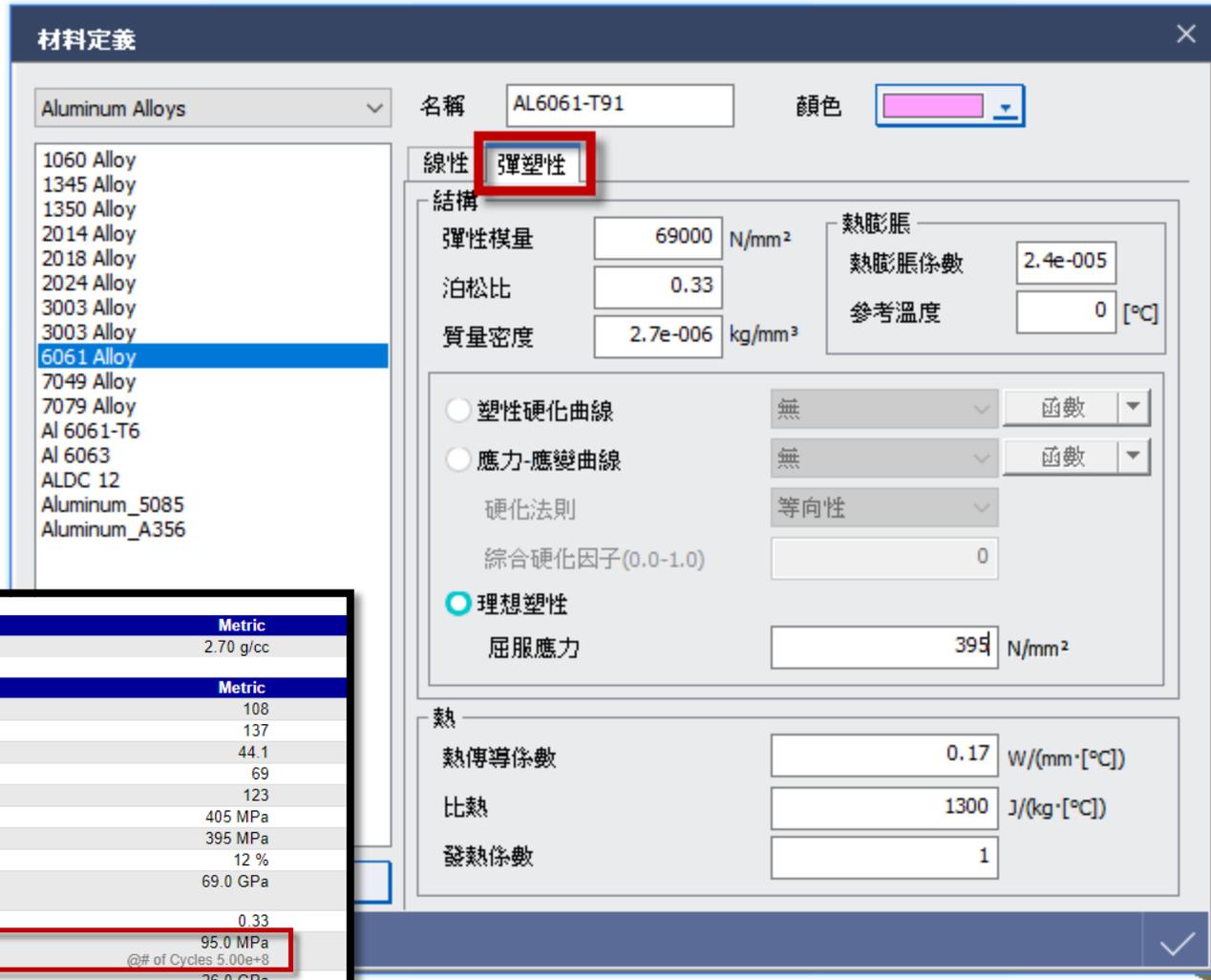


Step3.自動搜尋接觸面

註:預設接觸類型為焊接接觸



新增材料(AL6061-T91)



Physical Properties	Metric
Density	2.70 g/cc
Mechanical Properties	Metric
Hardness, Brinell	108
Hardness, Knoop	137
Hardness, Rockwell A	44.1
Hardness, Rockwell B	69
Hardness, Vickers	123
Tensile Strength, Ultimate	405 MPa
Tensile Strength, Yield	395 MPa
Elongation at Break	12 %
Modulus of Elasticity	69.0 GPa
Poissons Ratio	0.33
Fatigue Strength	95.0 MPa @# of Cycles 5.00e+8
Shear Modulus	26.0 GPa
Shear Strength	230 MPa

AL6061-T91材料係數_參考 www.matweb.com



選取前叉

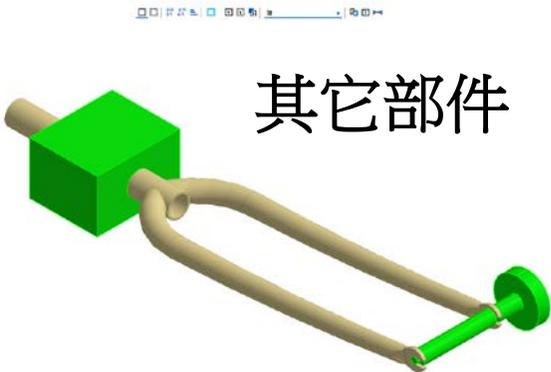
Context menu for the selected part:

- 僅顯示此部件
- 隱藏
- 編輯格點數量
- 刪除
- 初始溫度
- 重力
- 材料 (Material)

Material selection sub-menu:

- Alloy Steel
- AL6061-T91
- 添加: 材料

滑鼠右鍵,材料定義



其它部件

Context menu for the selected part (now tan):

- 僅顯示此部件
- 隱藏
- 編輯格點數量
- 刪除
- 初始溫度
- 重力
- 材料 (Material)

Material selection sub-menu:

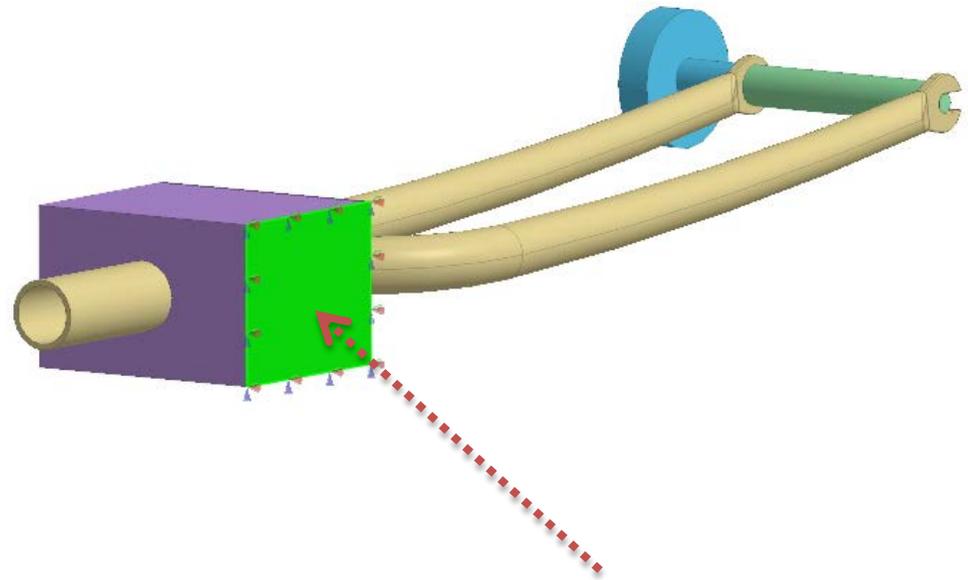
- Alloy Steel
- AL6061-T91
- 添加: 材料

滑鼠右鍵,材料定義

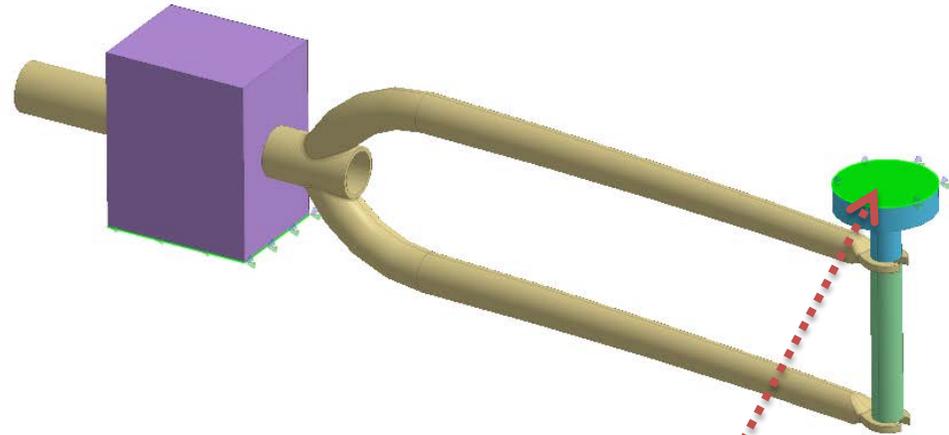
Model Tree (模型樹) showing material assignments:

模型	材料	顏色
模型設置		
幾何(4)		
<input checked="" type="checkbox"/> Extrude(1)	Alloy Steel	
<input checked="" type="checkbox"/> PR T0036	Alloy Steel	
<input checked="" type="checkbox"/> PR T0035	Alloy Steel	
<input checked="" type="checkbox"/> FOX_SOLID	AL6061-T91	
材料		
<input checked="" type="checkbox"/> Alloy Steel		
<input checked="" type="checkbox"/> AL6061-T91		
<input type="checkbox"/> 接觸(4)		
<input type="checkbox"/> 邊界		
<input type="checkbox"/> 載荷		

模型樹會顯示指定的材料



選取特徵拘束

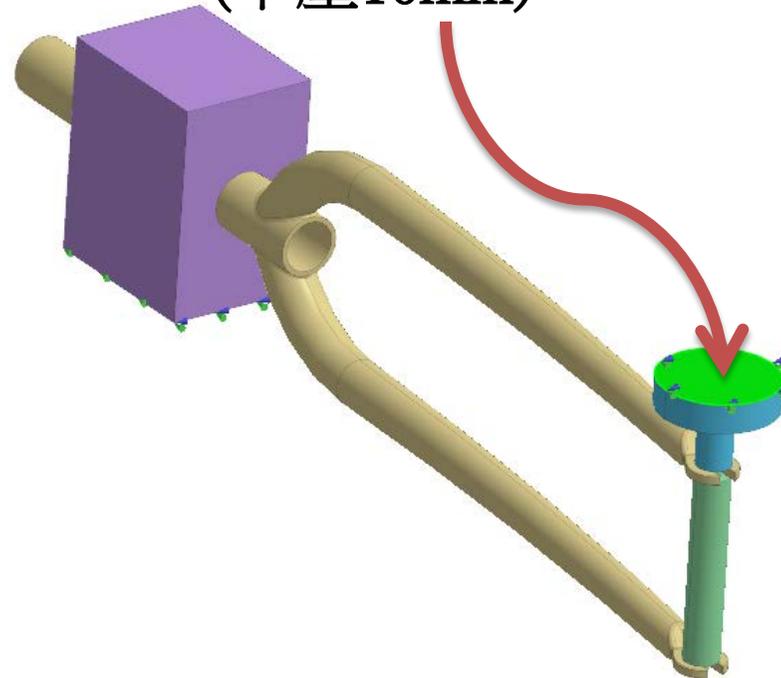


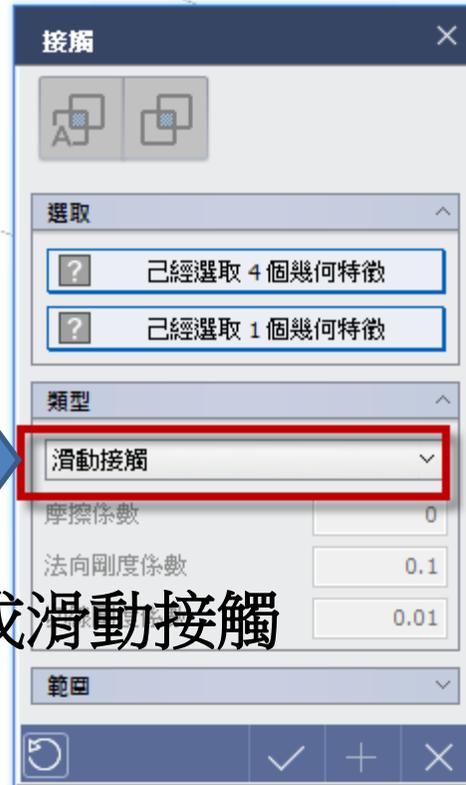
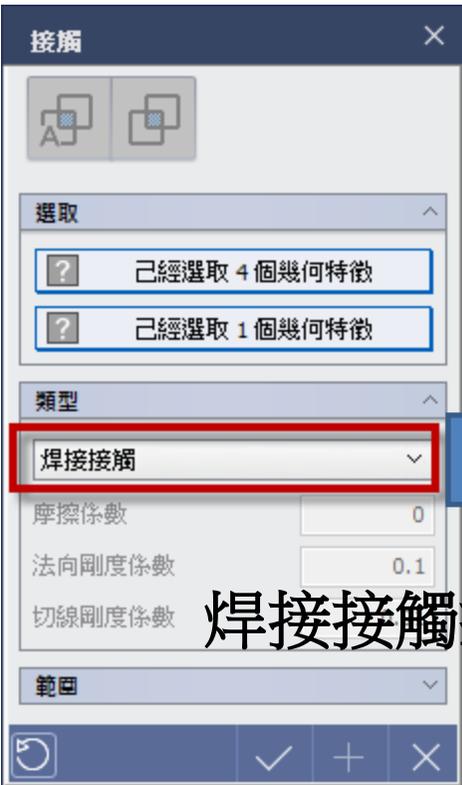
選取特徵拘束
(只拘束 Y,Z方向由由度)



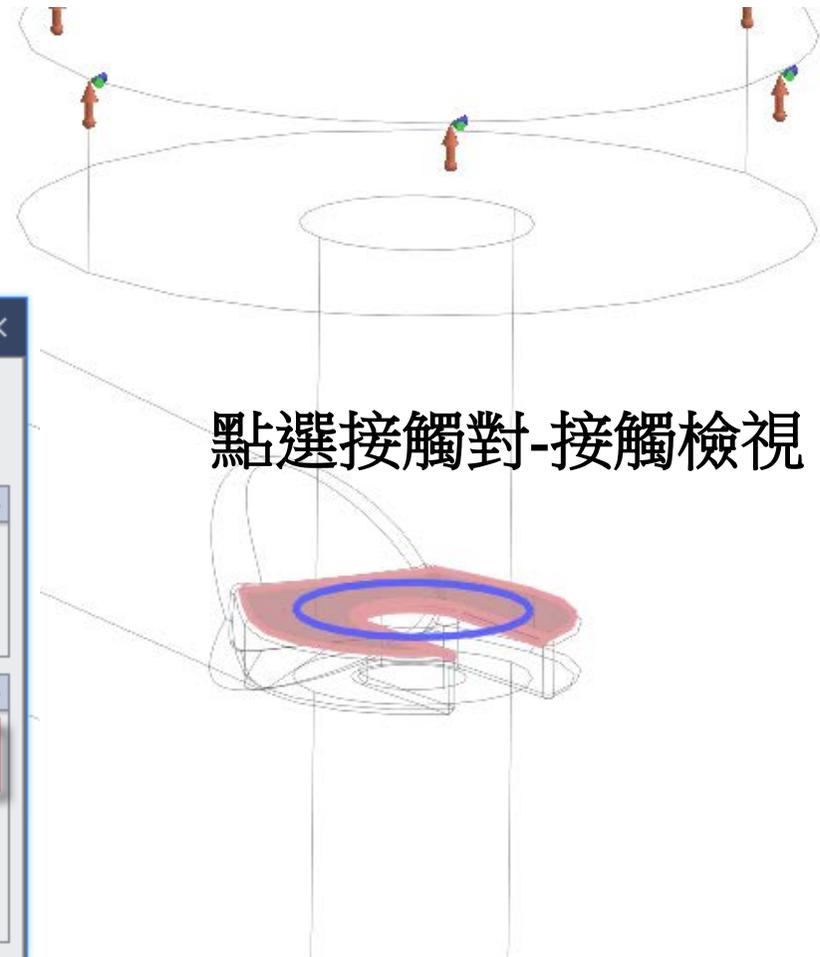
載荷

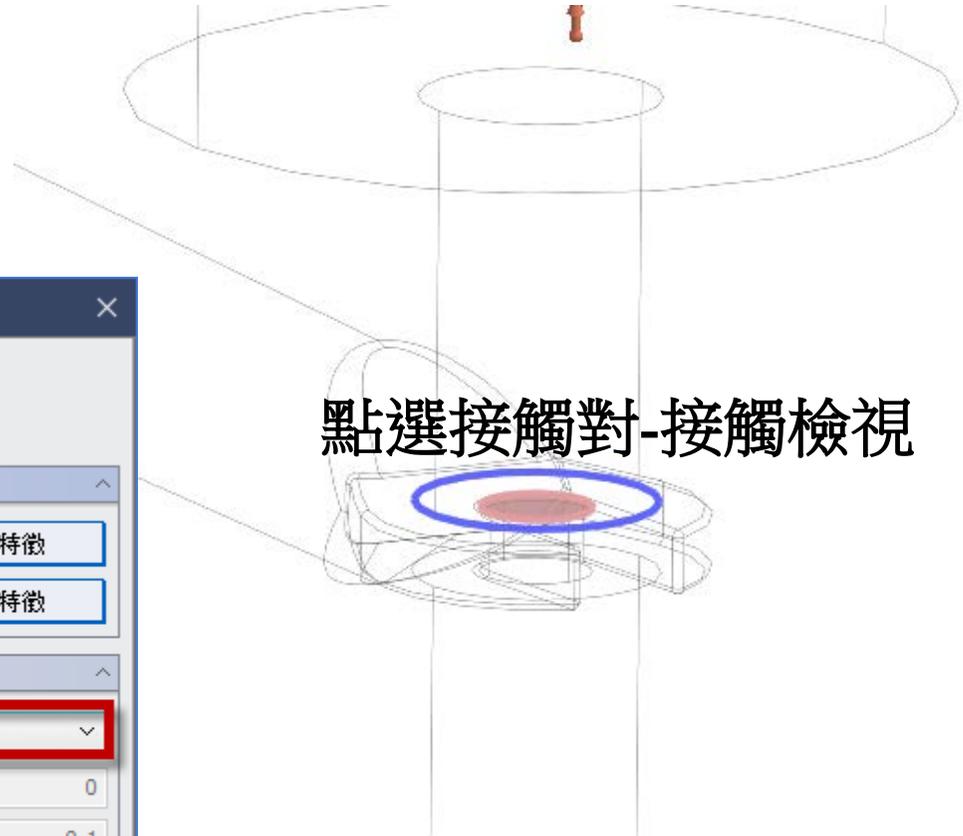
選取下壓治具特徵面
(下壓10mm)



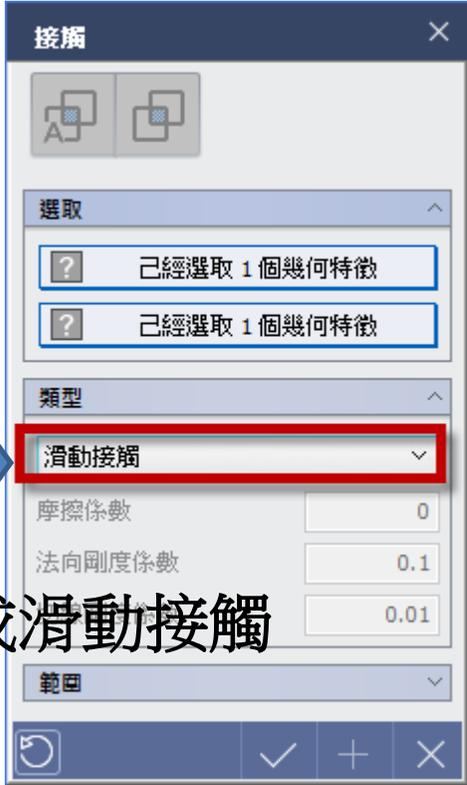
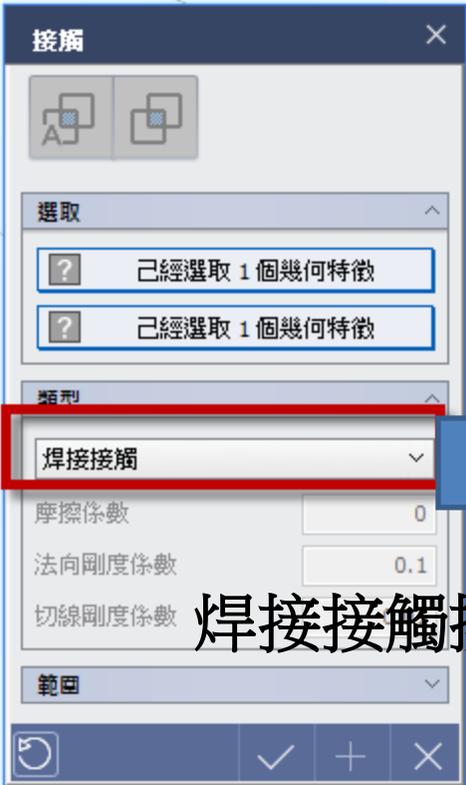


焊接接觸換成滑動接觸

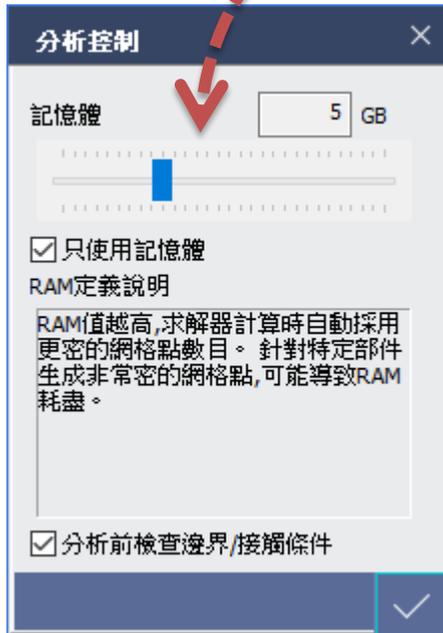
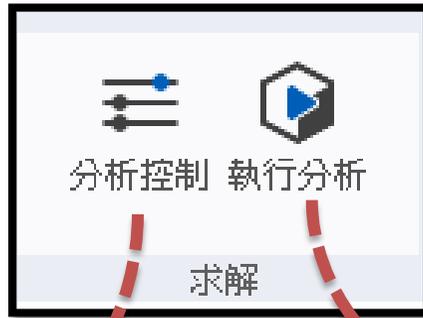




點選接觸對-接觸檢視

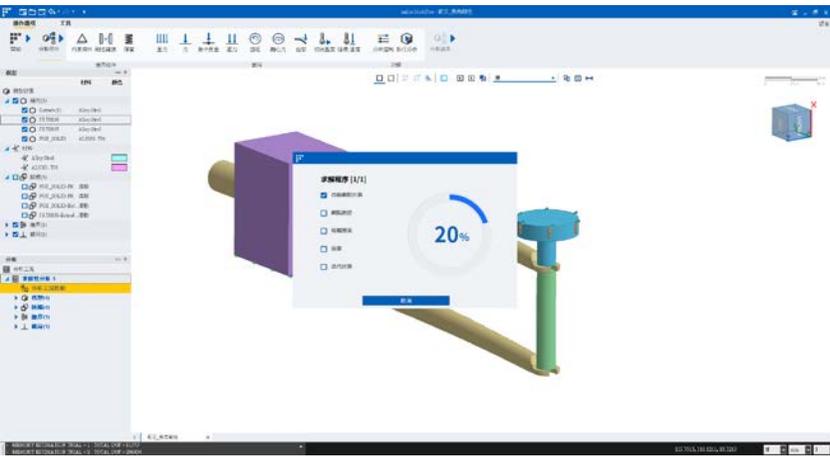


焊接接觸換成滑動接觸

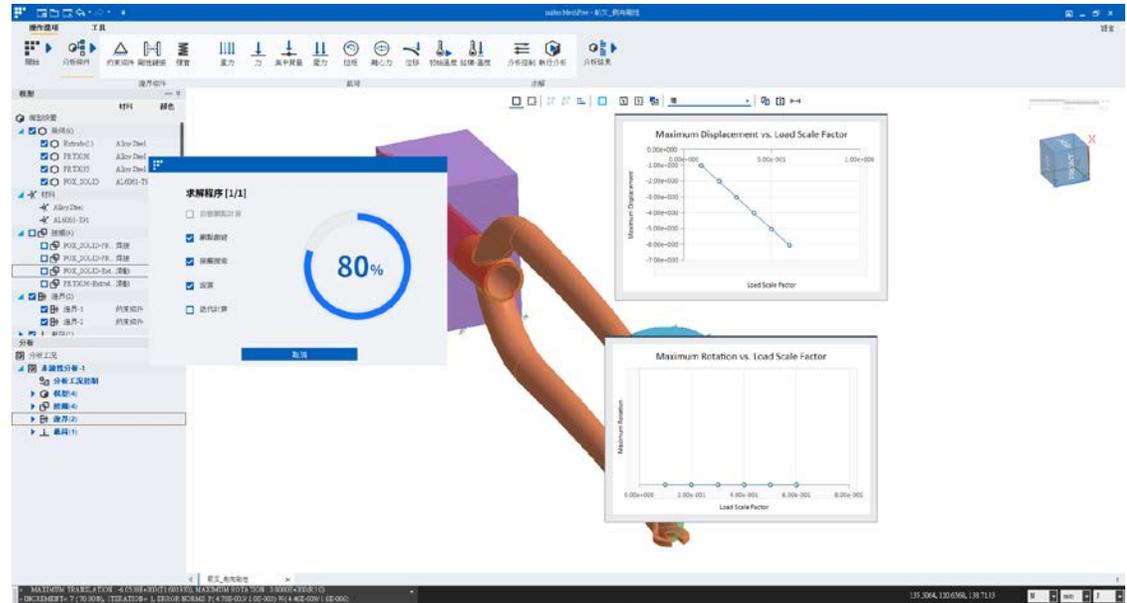


記憶體大小

- 1.計算速度
- 2.分析準確性



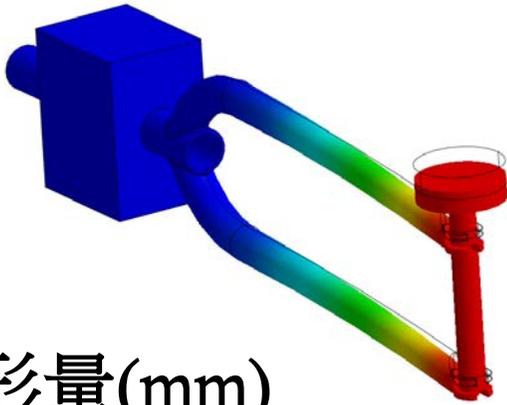
分析時間410.534sec
(採5G Ram)



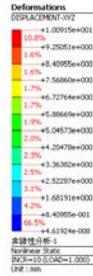
```

> ANALYSIS WALL CLOCK TIME : 403.877 sec
> ANALYSIS COMPLETED
>
> [SYSTEM INFO]
> NUMBER OF THREADS : 8
> MAXIMUM MEMORY USAGE : 6500 MB
> AVAILABLE MEMORY : 9959 MB
> TOTAL CPU TIME : 1423.69 sec
> WALL CLOCK TIME : 410.534 sec
> TOTAL WARNINGS : 0
>
> TOTAL WARNINGS : 0
    
```

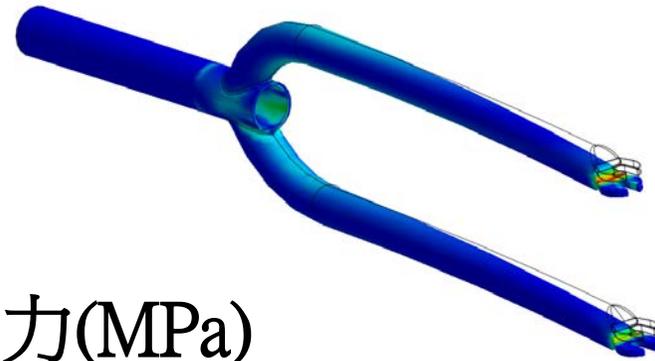
分析類型 非線性分析-1
Step INCR=10 (LOAD=1.000)
結果 DISPLACEMENT-VIZ



變形量(mm)

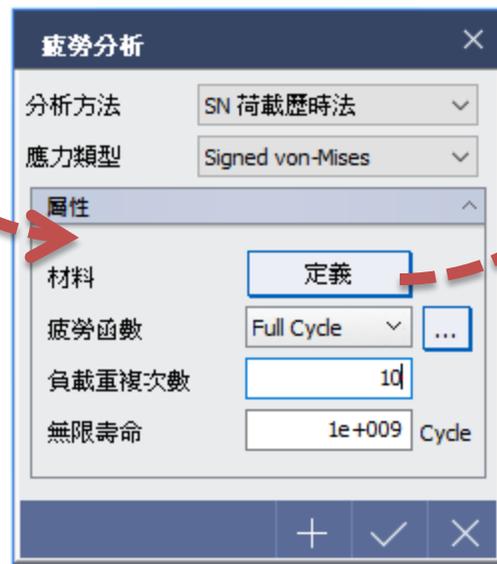


分析類型 非線性分析-1
Step INCR=10 (LOAD=1.000)
結果 STRESS VON MISES



應力(MPa)





AL6061-T91

Fatigue Strength	95.0 MPa @# of Cycles 5.00e+8
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