A

## Q 如何正確顯示3D模型中隧道版元素的輸出座標系統

3D隧道模型中如果使用版元素,其元素座標系混亂,如何觀看版元素結果, 使得有一致性可以擷取到適當的版元素受力結果?

如果隧道的方向與Global座標系統不一致時,可使用Model>Coordinate System指令定義一組新的座標系統。



跑完分析後Model>Property>Property(Plate)將output coordinate system選自訂之tunnel 32,並勾選"Project to Element Surface"選項, 如果重新跑分析時,須注意將Output Coordiate System切換至Element Csys

Add/Modify Property	Model>Element>Disp System(Plate) 可顯示	olay Output Coordinate 谕出座標系
OK Cancel Apply	Model Analysis Result Iools Wind   Image: State of the state of t	midas GTS - [未命名標題] dow _Help S & & ♥ ♥   伊 ]] : 図
	Node     Element     Iransform     Renumber     Property     Boundary     Load     Construction Stage     Display Material/Property     Yater Level     Tunnel Modeling Wizard     Anchor Modeling Wizard	Image: Create Control of Create Spring   F11     Image: Create Spring   Create Surface Spring     Image: Create Ground Surface Spring   Create Ground Surface Spring     Image: Create Ground Surface Spring   Create Ground Surface Spring     Image: Create Ground Surface Spring   Create Ground Surface Spring     Image: Create Ground Surface Spring   Create Ground Surface Spring     Image: Create Ground Surface Spring   Create Ground Surface Spring     Image: Create Ground Surface Spring   Create Ground Surface Spring     Image: Create Ground Surface Spring   Create Ground Surface Spring     Image: Create Ground Surface Spring   Create Ground Surface Spring     Image: Create Ground Surface Spring   Connection     Image: Create Ground Surface Spring   Connection     Image: Create Ground Surface Spring   Modify Topology     Image: Change Parameter   Image: Change Parameter     Image: Change Parameter

FAQ

如隧道方向與Global座標系一致時,可直接設定Output Coordiate System 為Global Rectangular即可。

Line Plane Spring/Inte	erface
General	
ID 1 Name	Color 🔤
Type Plate/	Plane Stress
Properties	
Thickness (t)	0 m
Output Coordinate Sys	stem Element CSys
(for plate only)	Global Rectangular

如何觀看版元素的方向,可參考On-Line Help中的解釋。 將x軸調整為軸向後,各項plate force results即為on-line help所述之方向。



Mxx 繞x軸旋轉之moment

## **Tunnel Lining**

For tunnel lining, specify the X axis aligned with the tunnel axis and make sure that the Z axis is not coplanar with any of the plate elements. In this case, plate force results will have the following meaning:

Fxx = axial force, Fyy = circumferential force, Fxy= in-plane shear force

Qzx = out-of-plane shear between rings, Qyz = out-of-plane shear in ring

Mxx = bending moment along tunnel axis, Myy = bending moment in ring