Peridynamics

FEM with shell

Example 2: Thin Structure

Objective: Compare the results from 3D peridynamics mesh and FEM shell mesh.

The results illustrated that peridynamic mode can represent a very thin structure by 1 layer of solid element.

Filename: *ex1periforplate.k ex1shell .k*

Description:
A thin cantilever beam is discretized by shell elements and discontinous Peridynamics elements.
The deflection-reaction force curves are compared.
You are expected to do the following studies by ***beta version of executable*** :

1.   Create two new directories (/peri and /sfem) under Example 1 . Copy ***ex1periforplate.k*** and ***ex1shell .k*** to them separately.

  2. Runing ex1periforplate.k and ex1shell.k.
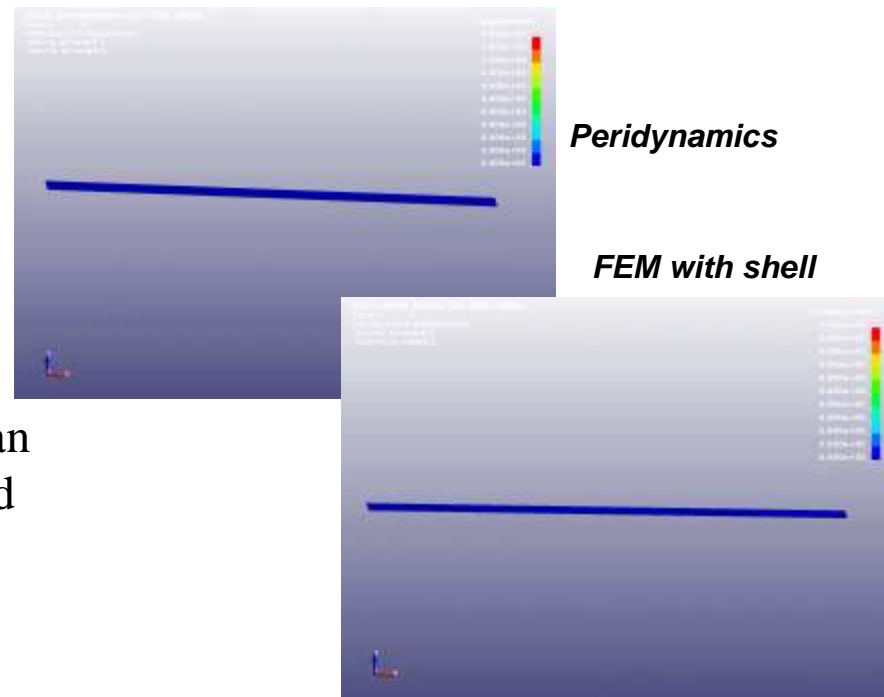
Example 2: Thin Structure(Cont.)

3. Go to /sfem folder, use ls-perpost open d3plot. Click *ASCII->nodefor->load->All->Total->Z-force->plot.* To show the deflection-reaction force curve.

4. Click **File** in the ASCII form. Go to ../peri, and select **nodfor** file. Then **Click Load->All->Total->Z-force->Padd** to add the deflection-reaction force curve by peridynamics model to that from FEM shell model.

5. Change the elastic modulus to 3.8e6. In messag file, find the max. peri micro-modulus and min. peri micro-modulus.