Fracture mechanics Tutorials - additional exercises

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Abstract

This document details a additional exercises of fracture mechanics. These exercises are recomeneded to be followed only after other tutorials of fracture mechanics have been followed.

Exercise 1

When calculating the reaction force produced on a surface, optionally try changing -reactionforce stress_based to -reactionforce variational_based for changing the method to extract reaction force, note that stress based method is way faster.

Exercise 2

Optionally try using -useGFP flag with PSD_PreProcess optimized solver. GFP acrynom for GoFast Plugins is a suite of C++ based fuctions built for PSD that are speed optimal.

Exercise 3

Add -sequential flag to PSD_PreProcess for sequential solver, but remember to use PSD_Solve_Seq instead of PSD_Solve

Advanced Exercise 1

try the -vectorial flag for vectorial finite element method

Advanced Exercise 2

try the -energydecomp flag for using split of tensile energy

Advanced Exercise 3

try using -constrainHPF flag for using the constrain condition in hybrid phase field model