School of Civil Engineering
High Performance Computing Laboratory

"XFEM modeling of crack initiation and propagation using the damage mechanics"

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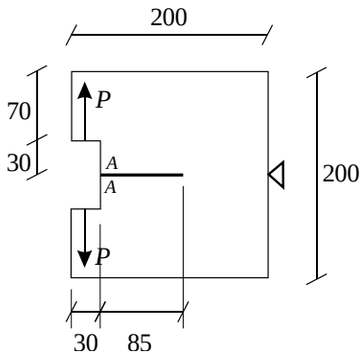
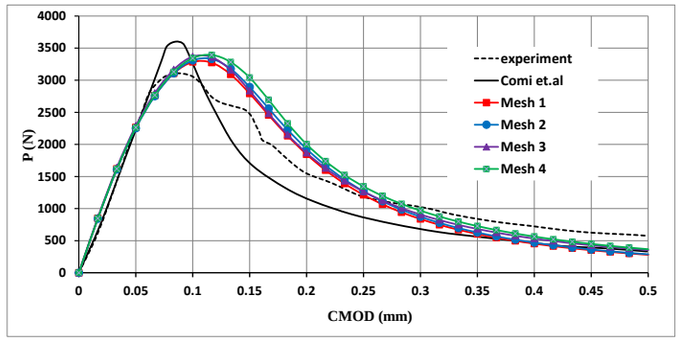
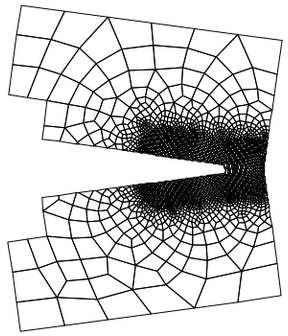


$E = 25200\ Mpa$
$\upsilon = 0.20$
$f_0 = 3.3\ Mpa$
$G_F = 101\ {}^{N}/_{m}$
$Thickness = 97\ mm$

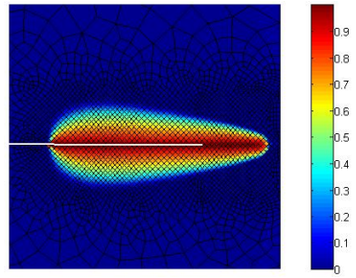
Geometry, boundary conditions and material properties of the wedge-splitting test



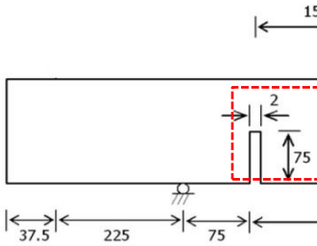
P versus CMOD of the wedge-splitting test



Exaggerated deformation of the wedge-splitting test with crack propagation

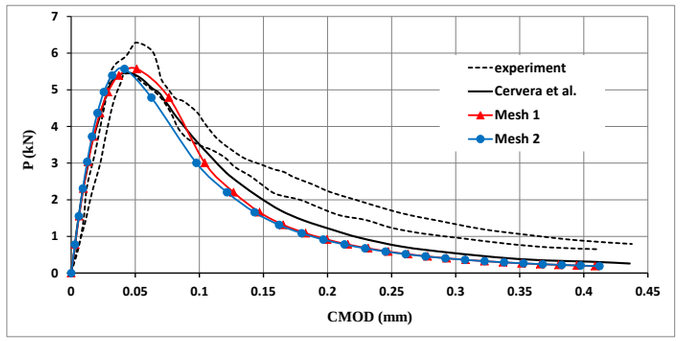


Damage contour at final stage with crack propagation

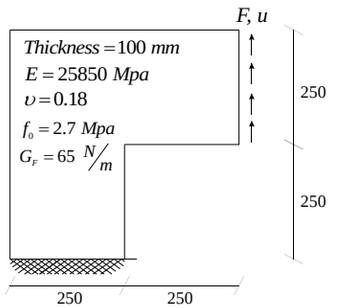


$E = 38000\ Mpa$
$f_0 = 3\ Mpa$
$\upsilon = 0.20$
$G_F = 69\ {}^{N}/_{m}$
$Thickness = 50\ mm$

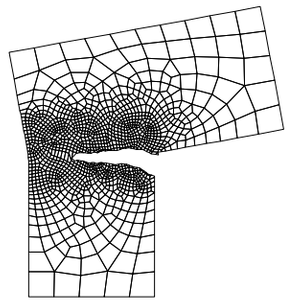
Geometry, boundary conditions and material properties of the mixed mode bending beam test



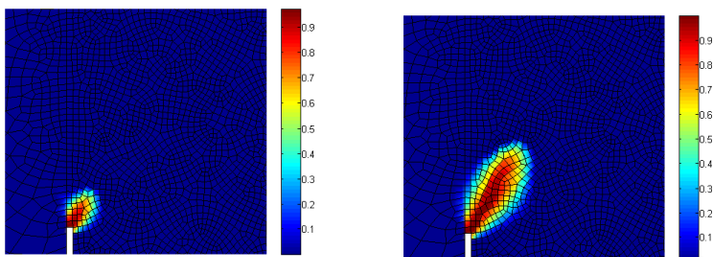
P versus CMOD of the mixed mode bending beam test



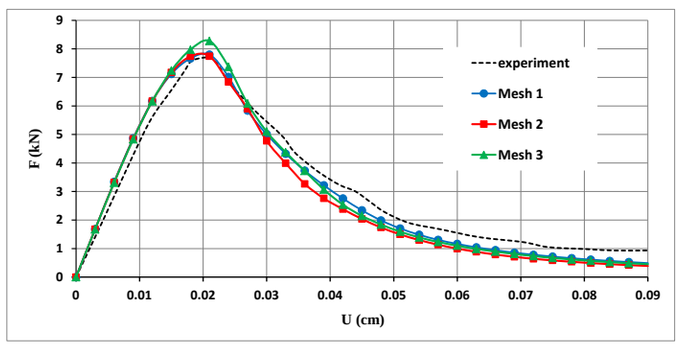
Geometry, boundary conditions and material properties of the L-shaped frame test



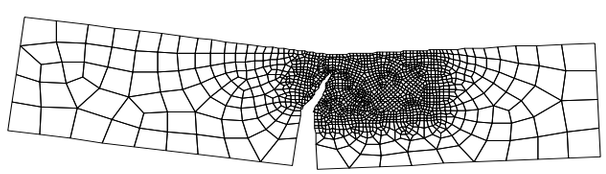
Exaggerated deformation of the frame with crack propagation



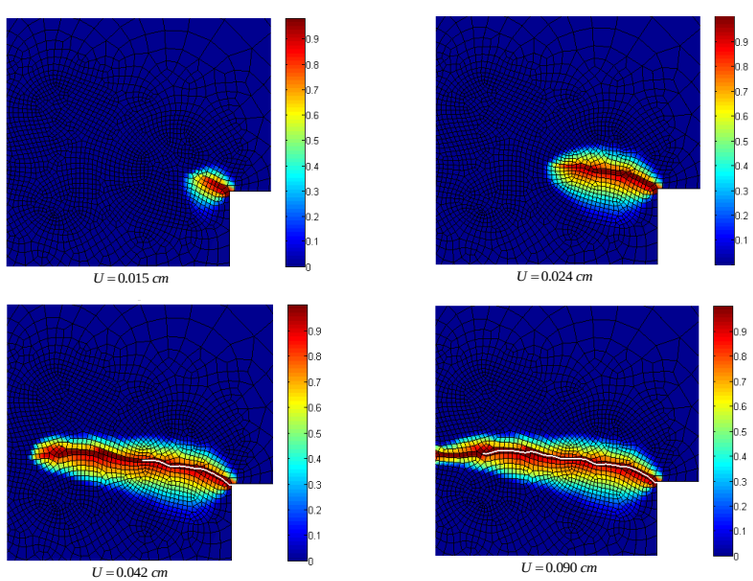
Damage contours at different stages of crack propagation



F versus U of the L-shaped frame test



Exaggerated deformation of the beam with crack propagation



Damage contours at different stages of crack propagation