

Fracture Analysis using XFEM

Event No	ME032
Organizing Department	Mechanical Engineering
Associate Dept. NSC	Centre of Excellence
Date	05/09/2022
Event Type	Webinar
Event Level	International
Venue	-
Details Link	https://meet.google.com/nzh-qeru-tvr
Total Participants	81
Faculty - Internal	3
Students - Internal	78

Related SDG




Outcome


To study the XFM analysis using Abaqus software Lean how to write subroutine material model code To determine the effect of process parameter on fracture analysis Understand the bone mechanics principles and modelling methods

Event Summary

The Department of Mechanical Engineering in association with Centre for Machining and Material Testing (CMT) organized a webinar on 'Introduction to XFEM'. The programme began with the inaugural function, where guest enlightened the participants about the concepts of fracture analysis. He explained research on bone Mechanics and fracture analysis and the major causes of failure in bones.



KPR Institute of Engineering and Technology
(Autonomous, NAAC "A")




Department of Mechanical Engineering

Department of Mechanical Engineering
In association with
Centre for Machining and Material Testing (CMMT)
Is organizing webinar on

Fracture Analysis using XFEM


Resource Person




Dr Ram Naresh Yadav Ph.D (IIT Ropar)
Post Doctoral Research Fellow, Bone and Joint Centre
Henry Ford Health Systems
Detroit, MI, USA

05 Sept

03:00 PM to 04:00 PM



SUSTAINABLE DEVELOPMENT GOALS



Google Meet Code:
nzh-qeru-tvr

KPRIET.ac.in
© KPRIT | KPRITonline

Click to View

16:03 41

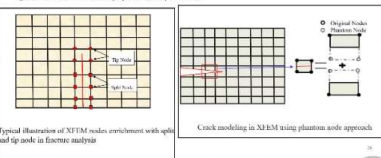
← Fracture Analysis ... →

Contd...

$$u(x) = \sum_{i=1}^N \phi_i(x) u_i + \sum_{j=1}^M \psi_j(x) \psi_j^T(x) \psi_j^T(x) \psi_j^T(x)$$

Split node Tip node

XFEM is a hierarchical fracture or discontinuous variational fracture, across the crack surface $\Gamma_D(x)$ is the associated elastic asymptotic crack-tip functions.



Typical illustration of XFEM nodes enrichment with split and tip node in fracture analysis

Crack modeling in XFEM using phantom node approach

ram naresh is presenting

21MEL25 ...

20ME081...

You

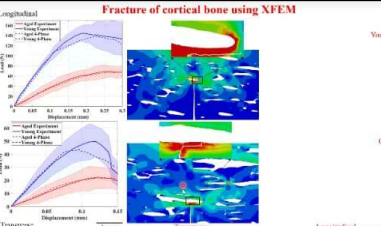
ram naresh 19 others

[Click to View](#)

16:08 39

← Fracture Analysis ... →

Fracture of cortical bone using XFEM



Longitudinal

Transverse

ram naresh is presenting

ram naresh

21MEL25 ...

You

20ME081... 20 others

Click to View

*** END ***