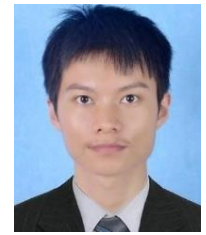


Youbin CHEN

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Education

Period	University	Major	Degree
2016.11 - 2019.11	PSL Research university	Mechanics	Doctorate
2014.09 - 2016.06	Zhongshan university	Nuclear Engineering and Technology	Master
2010.09 - 2014.06	Zhongshan university	Nuclear Engineering and Technology	Bachelor

Self-review

- ✓ 6 years' experience of Finite Element Analysis (FEA) on mechanics
- ✓ Bachelor's and Master's majors: finite element method, solid mechanics, Mathematics (in French, 3 years), nuclear physics, French, etc. Doctoral major: plasticity mechanics and damage mechanics
- ✓ Familiar with FEA softwares Abaqus and Code_Aster, the FE pre- and post-processing platform Salome
- ✓ Familiar with modeling and simulation of ductile/brittle fracture, good at data analyses
- ✓ Familiar with scientific drawing software Gnuplot, Office software and Latex, etc.
- ✓ Understand Python, Fortran, C and other programming languages

Research

Program

2014.11 - 2015.09 Science and Technology Program of Guangzhou (No.201510010082)

Publication

- 2016.11 - 2019.11 Doctoral dissertation
- ♦ Modeling of ductile fracture using local approach: Reliable simulation of crack extension
- Research articles
- ♦ Chen, Y., Lorentz, E., Besson, J., 2019. Properties of a nonlocal GTN model in the context of small-scale yielding. International Journal of Plasticity (Under review)
 - ♦ Chen, Y., Lorentz, E., Besson, J., A gradient plasticity model for ductile fracture: strategies for numerical robustness and reliability (Under preparation)
 - ♦ Chen, Y., Lorentz, E., Besson, J., Dahl, A., Simulation of ductile crack initiation and propagation in a C-Mn steel using a nonlocal GTN model (Under preparation)
- 2014.09 - 2016.06 Master's thesis
- ♦ Numerical simulation of pre-stressed reinforced concrete structure
- Research articles
- ♦ Chen, Y., Zhang, C. and Varé, C., 2017. An extended GTN model for indentation-induced damage. Computational Materials Science, 128, pp.229-235
 - ♦ Zhang, C., Zhu, Y., Chen, Y., Cao, N. and Chen, L., 2017. Understanding indentation-induced elastic modulus degradation of ductile metallic materials. Materials Science and Engineering: A, 696, pp.445-452.
- 2010.09 - 2014.06 Bachelor's thesis
- ♦ Modeling of thermomechanical behavior of concrete-steel composite structure

Project experience

2016.11-2019.10

MODERN project

EDF R&D

Description: Study of fatigue damage and ductile damage behavior of nuclear materials

Responsibility:

- ♦ Investigate different non-local models, different solutions for volumetric-locking, adaptive mesh refinement and different ways for the treatment of broken finite elements
- ♦ Choose a non-local model to handle strain-localization issue
- ♦ Propose an augmented mixed finite element formulation to solve volumetric-locking
- ♦ Propose a viscoelasticity model to treat zero stiffness broken finite elements
- ♦ Implement constitutive relations and finite elements in finite element software Code_Aster
- ♦ Create some test-cases for the verification of numerical implementation

2018.06-2019.10

ATLAS+ project

EDF R&D

Description: Development of advanced structural optimization tools to ensure nuclear safety

Responsibility:

- ♦ Check the applicability of the proposed non-local damage model in structural optimization tools
- ♦ Simulate a full-scale pipe with real material properties to predict crack propagation
- ♦ Compare simulated/experimental results and analyze the simulation results

2015.12 - 2016.05

Master's project

EDF R&D

Description: Study the overall containment of the nuclear containment building

Responsibility:

- ♦ Investigate and compare several brittle cohesive zone model (CZM)
- ♦ Simulate pre-stressed reinforced concrete structures under internal pressure loading conditions using Code_Aster

2015.07 - 2015.09

Science and Technology Program

Zhongshan university

Description: Extension of the GTN ductile damage model at low triaxiality for indentation-induced damage

Responsibility:

- ♦ Review on different extensions of the GTN ductile damage model at low triaxiality
- ♦ Propose an adequate model and realize the corresponding mathematical modeling
- ♦ Implement the constitutive relation in the finite element software Abaqus
- ♦ Perform indentation simulation and compare simulated/experimental results for model optimization

2013.09 - 2014.06

Bachelor's project

Zhongshan university

Description: Modeling of thermo-mechanical behavior of concrete-steel combined structure

Responsibility:

- ♦ Simulate concrete-steel combined structures under shear loading conditions
- ♦ Compare experimental/simulated results

Language

Chinese

French

English

Native language

Advanced (DELF B2)

Good (TOEIC B2, CET-6)

Hobby

Hiking; Badminton; Music; Reading