

# Effects of Subscale Size and Shape on Global Energy Dissipation in a Multiscale Model of a Fiber-Reinforced Composite Exhibiting Post-Peak Strain Softening Using Abaqus and FEAMAC



Effects of Subscale Size and Shape on Global Energy Dissipation in a Multiscale Model of a Fiber-Reinforced Composite Exhibiting Post-Peak Strain Softening Using Abaqus and FEAMAC

NASA Technical Reports Server  
(NTRS), et al., Evan J. Pineda

Filesize: 8.62 MB

## Reviews

*These types of book is the greatest ebook readily available. I was able to comprehended every little thing using this published e pdf. I realized this pdf from my dad and i encouraged this publication to discover.*

*(Dr. Porter Mitchell)*

## EFFECTS OF SUBSCALE SIZE AND SHAPE ON GLOBAL ENERGY DISSIPATION IN A MULTISCALE MODEL OF A FIBER-REINFORCED COMPOSITE EXHIBITING POST-PEAK STRAIN SOFT

[DOWNLOAD PDF](#)

BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 26 pages. Dimensions: 9.7in. x 7.4in. x 0.1in. A mesh objective crack band model is implemented in the generalized method of cells (GMC) micromechanics model to predict failure of a composite repeating unit cell (RUC). The micromechanics calculations are achieved using the MACGMC core engine within the ImMAC suite of micromechanics codes, developed at the NASA Glenn Research Center. The microscale RUC is linked to a macroscale AbaqusStandard finite element model using the FEAMAC multiscale framework (included in the ImMAC suite). The effects of the relationship between the characteristic length of the finite element and the size of the microscale RUC on the total energy dissipation of the multiscale model are investigated. A simple 2-D composite square subjected to uniaxial tension is used to demonstrate the effects of scaling the dimensions of the RUC such that the length of the sides of the RUC are equal to the characteristic length of the finite element. These results are compared to simulations where the size of the RUC is fixed, independent of the element size. Simulations are carried out for a variety of mesh densities and element shapes, including square and triangular. Results indicate that a consistent size and shape must be used to yield preserve energy dissipation across the scales. This item ships from La Vergne, TN. Paperback.



[Read Effects of Subscale Size and Shape on Global Energy Dissipation in a Multiscale Model of a Fiber-Reinforced Composite Exhibiting Post-Peak Strain Soft Online](#)



[Download PDF Effects of Subscale Size and Shape on Global Energy Dissipation in a Multiscale Model of a Fiber-Reinforced Composite Exhibiting Post-Peak Strain Soft](#)

## Related Books

---



### **Kindle Fire Tips And Tricks How To Unlock The True Power Inside Your Kindle Fire**

CreateSpace Independent Publishing Platform. Paperback. Book Condition: New. This item is printed on demand. Paperback. 52 pages. Dimensions: 9.0in. x 6.0in. x 0.1in. Still finding it getting your way around your Kindle Fire Wish you had...

[Download eBook »](#)

---



### **Memoirs of Robert Cary, Earl of Monmouth**

BiblioLife. Paperback. Book Condition: New. This item is printed on demand. Paperback. 142 pages. Dimensions: 8.0in. x 5.0in. x 0.3in. The Author of the Memoirs. The Memoirs here presented to the reader may be said to...

[Download eBook »](#)

---



### **Aeschylus**

BiblioLife. Paperback. Book Condition: New. This item is printed on demand. Paperback. 260 pages. Dimensions: 8.0in. x 5.0in. x 0.6in. This Translation of Aeschylus, an entirely new one, is designed as an Appendix to my...

[Download eBook »](#)

---



### **Just So Stories**

CreateSpace Independent Publishing Platform. Paperback. Book Condition: New. This item is printed on demand. Paperback. 114 pages. Dimensions: 9.0in. x 6.0in. x 0.3in. The Just So Stories for Little Children were written by British author Rudyard...

[Download eBook »](#)

---



### **The Mystery at Motown Carole Marsh Mysteries**

Carole Marsh Mysteries. Paperback. Book Condition: New. Randolyn Friedlander (illustrator). Paperback. 32 pages. Dimensions: 11.1in. x 8.7in. x 0.0in. When you purchase the Library Bound mystery you will receive FREE online eBook access! Carole Marsh Mystery...

[Download eBook »](#)