#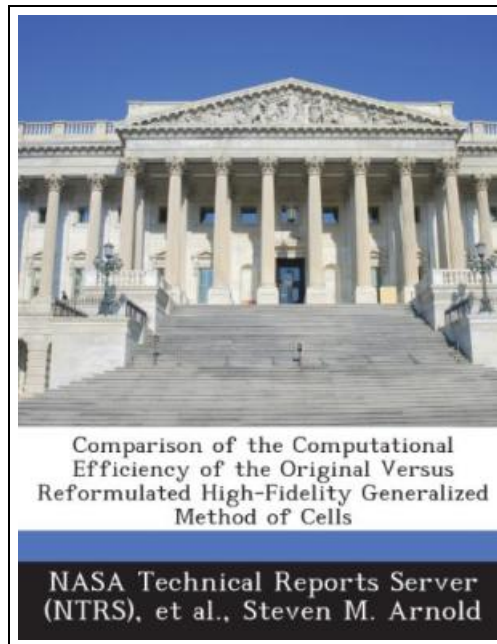 Comparison of the Computational Efficiency of the Original Versus Reformulated High-Fidelity Generalized Method of Cells

Comparison of the Computational Efficiency of the Original Versus Reformulated High-Fidelity Generalized Method of Cells

NASA Technical Reports Server (NTRS), et al., Steven M. Arnold

Filesize: 7.2 MB

Reviews

Complete manual! Its this type of excellent study. This can be for all who statte there was not a worth looking at. Your daily life span will probably be enhance when you complete reading this article pdf.
(Lottie Murazik Sr.)

COMPARISON OF THE COMPUTATIONAL EFFICIENCY OF THE ORIGINAL VERSUS REFORMULATED HIGH-FIDELITY GENERALIZED METHOD OF CELLS

To get **Comparison of the Computational Efficiency of the Original Versus Reformulated High-Fidelity Generalized Method of Cells** eBook, please access the hyperlink listed below and save the ebook or have accessibility to additional information which might be highly relevant to COMPARISON OF THE COMPUTATIONAL EFFICIENCY OF THE ORIGINAL VERSUS REFORMULATED HIGH-FIDELITY GENERALIZED METHOD OF CELLS ebook.

BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 30 pages. Dimensions: 9.7in. x 7.4in. x 0.1in.The High-Fidelity Generalized Method of Cells (HFGMC) micromechanics model has recently been reformulated by Bansal and Pindera (in the context of elastic phases with perfect bonding) to maximize its computational efficiency. This reformulated version of HFGMC has now been extended to include both inelastic phases and imperfect fiber-matrix bonding. The present paper presents an overview of the HFGMC theory in both its original and reformulated forms and a comparison of the results of the two implementations. The objective is to establish the correlation between the two HFGMC formulations and document the improved efficiency offered by the reformulation. The results compare the macro and micro scale predictions of the continuous reinforcement (doubly-periodic) and discontinuous reinforcement (triply-periodic) versions of both formulations into the inelastic regime, and, in the case of the discontinuous reinforcement version, with both perfect and weak interfacial bonding. The results demonstrate that identical predictions are obtained using either the original or reformulated implementations of HFGMC aside from small numerical differences in the inelastic regime due to the different implementation schemes used for the inelastic terms present in the two formulations. Finally, a direct comparison of execution times is presented for the original formulation and reformulation code implementations. It is shown that as the discretization employed in representing the composite repeating unit cell becomes increasingly refined (requiring a larger number of sub-volumes), the reformulated implementation becomes significantly (approximately an order of magnitude at best) more computationally efficient in both the continuous reinforcement (doubly-periodic) and discontinuous reinforcement (triply-periodic) cases. This item ships from La Vergne,TN. Paperback.

- [Read Comparison of the Computational Efficiency of the Original Versus Reformulated High-Fidelity Generalized Method of Cells Online](#)
- [Download PDF Comparison of the Computational Efficiency of the Original Versus Reformulated High-Fidelity Generalized Method of Cells](#)

Other Books

[PDF] The Adventures of Sheriff Williker: /Book 1: The Case of the Missing Horseshoe
Access the link below to read "The Adventures of Sheriff Williker: /Book 1: The Case of the Missing Horseshoe" file.
Read PDF »

[PDF] Now and Then: From Coney Island to Here
Access the link below to read "Now and Then: From Coney Island to Here" file.
Read PDF »

[PDF] Two Treatises: The Pearle of the Gospell, and the Pilgrims Profession to Which Is Added a Glasse for Gentlewomen to Dresse Themselues By. by Thomas Taylor Preacher of Gods Word to the Towne of Reding. (1624-1625)
Access the link below to read "Two Treatises: The Pearle of the Gospell, and the Pilgrims Profession to Which Is Added a Glasse for Gentlewomen to Dresse Themselues By. by Thomas Taylor Preacher of Gods Word to the Towne of Reding. (1624-1625)" file.
Read PDF »

[PDF] Two Treatises: The Pearle of the Gospell, and the Pilgrims Profession to Which Is Added a Glasse for Gentlewomen to Dresse Themselues By. by Thomas Taylor Preacher of Gods Word to the Towne of Reding. (1625)
Access the link below to read "Two Treatises: The Pearle of the Gospell, and the Pilgrims Profession to Which Is Added a Glasse for Gentlewomen to Dresse Themselues By. by Thomas Taylor Preacher of Gods Word to the Towne of Reding. (1625)" file.
Read PDF »

[PDF] From Dare to Due Date
Access the link below to read "From Dare to Due Date" file.
Read PDF »

[PDF] Some of My Best Friends Are Books : Guiding Gifted Readers from Preschool to High School
Access the link below to read "Some of My Best Friends Are Books : Guiding Gifted Readers from Preschool to High School" file.
Read PDF »