Software Lab Project #11
Development of the failure criteria for composites

Group Meeting #4

Date: Wednesday 3-7-2019. (5:30 to 6:30 PM)

Location: Chair of Computational Mechanics (Room: N2620)

In attendance: Ani Khaloian, Michael Richter (Project supervisors)

Ammar Khallouf, Gavallas Panagiotis, Yasuyuki Shimizu (Group members)

1. Discussion of work progress:

-The group represented by Mr. Khallouf briefed the supervisors on the prepared UMAT script for maximum stress failure criteria with instant damage model.

-Mr. Khallouf expressed his concern on the application of damage reduction factor, as the reviewed literature recommends reducing the corresponding terms in the constitutive matrix instead of directly reducing the elastic properties to maintain symmetry of the jacobian matrix during analysis.

-Mr. Khallouf previewed the unit cube model used for validating the UMAT results.

-Mr. Khallouf discussed with the supervisors about the potential of applying different damage models and also moving towards VUMAT subroutine to avoid the convergence difficulties associated with the implicit FEM scheme.

-Mr. Khallouf discussed with the supervisors about the available theories for forming the laminate elastic properties using the microstructure properties of fiber and matrix.

-Mr. Richter, provided the recommendation of using the WWFE test cases on composites as benchmark cases for our project.

2.Discussing the Content of 2ⁿᵈ Review Presentation:

-The group members presented their suggestions for the material to be included in the 2ⁿᵈ presentation

-The supervisors emphasized again the importance of abstraction and time management when preparing the slides. They recommended including a lot of animations and interactive figures and reduce the text content of the slides.

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- The supervisors asked for submitting a draft version of the slides no later than 15th of July for providing advice and feedback on improving the slides quality.

4. Next Meeting:

-The next meeting with the supervisors will be held on Wednesday, August, 7th at 17:30 (Room N2620).