

Comment (1): The manuscript presents an experimental and modeling study on the in plane tensile, compressive and shear behavior of 2D C/SiC composites over quasistatic to medium strain rate regimes. However, major revisions are required.

The novelty of the study should be emphasized.

Response: Thanks for your carefulness and suggestion. For most materials, the rate sensitivity varies across different strain rate ranges. If only the rules obtained under high strain rates are used to analyze the structure, there will be significant deviations in the strength analysis. Therefore, the work in this paper can provide data support for the analysis and design of the mechanical behavior of C/SiC structures within the medium strain rate range. Besides, this paper compares the strain rate sensitivity of the in-plane tensile, compressive and shear strengths of the material within the medium strain rate range. The research finds that the strain rate sensitivity of the tensile strength within the intermediate strain rate range is different from the conclusions obtained from the studies including both low strain rate and high strain rate. Furthermore, this work proved that this constitutive model proposed by Liu was also applicable to the in-plane tensile and shear loading mechanical behaviors of C/SiC materials within the medium strain rate range.

Comment (2): The manuscript does not report the number of specimens.

Response: Thanks for your carefulness and suggestion. For each loading condition, three to five specimens were tested. This has been added in the revised text.

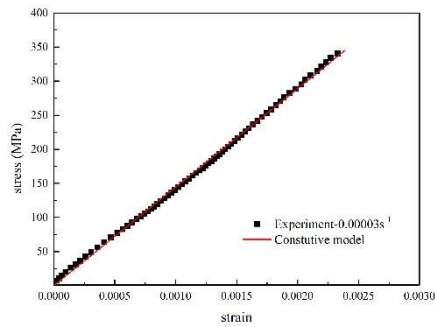
Comment (3): The discussion of energy consumption for multiple crack initiation remains qualitative.

Response: Thank you for pointing this out. Energy absorption can generally be quantitatively measured by acoustic emission in quasi-static and fatigue tests. But, in dynamic test, the response time is too short to accurately obtain the number of acoustic emission response events, making it difficult to quantitatively compare the damage energy. Moreover, since cracks can only be observed on the fracture surfaces and the surface of the test piece, and cracks generated within the material cannot be observed,

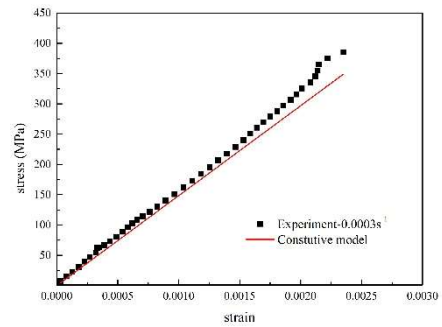
it is impossible to quantitatively compare the number of cracks.

Comment (4): The model is not validated for compression beyond linear elastic.

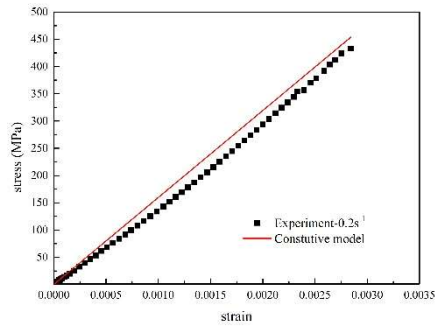
Response: Thank you for pointing this out. The comparison between the constitutive model and the in-plane compressive experimental data at different strain rates has been added in Figure 16 in the revised text. The constitutive model agrees well with the experimental data under in compression loading conditions.



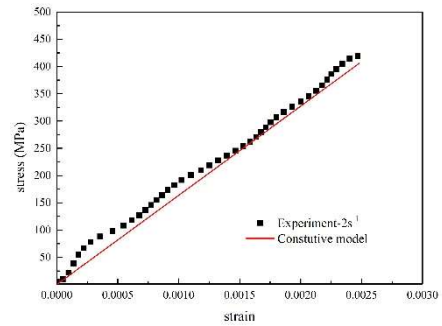
(a)



(b)



(c)



(d)

Figure 16. The comparison between the constitutive model and the in-plane compressive experimental data at strain rates of 0.00003s^{-1} (a) 0.0003s^{-1} (b) 0.2s^{-1} (c) and 2s^{-1} (d)