

Review Form 1.6

Journal Name:	Journal of Materials Science Research and Reviews
Manuscript Number:	Ms_JMSRR_94617
Title of the Manuscript:	An Enhanced Micro-Spring Constitutive Model of Metal Rubber
Type of the Article	Original Research Article

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

<https://journaljmsrr.com/index.php/JMSRR/editorial-policy>)

PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	<p>Based on the micro spring element, a mechanical constitutive model of metal rubber is established to describe the nonlinear contact mode and mechanical properties. However, there are still some doubts about the nonlinear constitutive model based on contact mode and random spatial distribution constructed in this manuscript. Finally, there needs to be more innovative ideas in this manuscript. The detailed comments are as follows.</p> <ol style="list-style-type: none"> 1. The author did not give an overview of the preparation process of metal rubber materials, so the readers could not understand the material morphology. 2. The "Before cold-pressed, the helical spring-units are randomly oriented with a uniform orientation angle over ." mentioned above in Formula 2 by the author can be seen from the preparation process of metal rubber. The material is formed by winding and stamping a continuous metal spiral. Why does the author propose that helical spring units are uniformly distributed? Is the end of the blank considered? 3. What is the basis for the author's assumption that the spatial orientation angle in Equation 2 follows a normal distribution? As far as I know, the Laeda criterion eliminates the samples with apparent outliers in the statistical data. Why is the author based on it? Equation 2-3 was first mentioned in the paper published by Ma Yanhong in 2015. Does the author cite it? 4. What is the difference between the spring microelement-based constitutive element proposed by the author and the constitutive model proposed by Ren et al. in 2022? The most important one is what is the basis for the distribution proportion given in Fig. 6? If it is a probability distribution, is a more authentic expression given? 5. Is the differential equation given in Equation 31 correct? If it is correct, there is an error in the integration process of equations 31 to 33. At the same time, the author is requested to provide the basis for Equation 31. 6. Why does the author transform the strain function into polynomial form in Equation 34? What is this significance, and why not retain its original condition? 	
Minor REVISION comments		
Optional/General comments		

PART 2:

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Are there ethical issues in this manuscript?	<u>(If yes, Kindly please write down the ethical issues here in details)</u>	

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