

**MULTISCALE AND MULTI-PHYSICS COMPUTATIONAL  
METHODS FOR TIRE-ROAD CONTACT MECHANICS  
(INCLUDES ABRATION AND WEAR, FRICTION, TRACTION  
(WET AND DRY), NOISE, AERODYNAMICS, DURABILITY,  
ROLING RESISTANCE, AND HYDROPLANNING)**

**SAIED TAHERI**

Virginia Tech  
1600 Innovation Drive  
Blacksburg, VA 24060

[staheri@vt.edu](mailto:staheri@vt.edu)

<https://me.vt.edu/people/faculty/taheri-saied.html>

**ABSTRACT**

The contact between the tire and the road has been the subject of study by several scientists. Although the level of available literature is vast, there are many topics which have not been fully explored or are part of ongoing research. The objective of this session is to bring together the scientists most well known in this topic and explore the possibility of creating new topics through collaboration. The multilength scale modelling of tire road contact coupled with Multiphysics associated with air, water, and contaminants makes this a topic of interest to many organizations and researchers. Papers will be accepted for the following topics:

- 1- Multilength scale modelling of tire-road Contact and Friction
- 2- Multilength scale modelling of tire Abrasion and Wear
- 3- Multilength modelling of tire traction on dry and wet surfaces
- 4- Coupled Multilength and Multiphysics modelling of tire hydroplaning
- 5- Multiphysics modelling of tire aerodynamics
- 6- Coupled Multilength and Multiphysics modelling of tire high frequency noise