



NEWSLETTER

May 2021

Please forward our monthly Tire Society newsletters to any colleagues and friends you think might be interested in learning more about the Tire Society and our mission to increase and disseminate knowledge of the science and technology of tires.

Tire Society Conference News

The Virtual Tire

2021 Headlining Speakers Announced

Mike Anderson will provide the Keynote Address for this year's [Conference on Tire Science and Technology](#) which will be held online **August 30 – September 3**. Mike serves as the Executive Director, Global Virtual Design, Development & Validation at General Motors. Mike and his team are responsible for the computer-aided engineering (CAE) of every component, sub-system, and integration area of all current & future GM vehicles. He is also President-Elect of FASITA, a world body promoting excellence in mobility engineering and a member of the Exascale Computing Project Industry Council.



Mike Anderson

Executive Director, Global Virtual Design, Development & Validation, General Motors, will be the Keynote speaker.

Dr.-Ing. Christian Oertel will provide the first of two Plenary Lectures this year. Dr.-Ing. Oertel, who earned his PhD at the Technical University of Berlin, is a Professor at TH Brandenburg University of Applied Sciences, Mechatronics. He leads research and development teams in various industry and government sponsored research and development programs in collaboration with commercial software companies like T-Systems and IAT in Berlin. His areas of research range across tire mechanics – along with the development of the tire model family RMOD-K; vehicle system dynamics - including tire models and full vehicle multibody simulations; tire testing and the tire property lab at TH Brandenburg; and virtual tire modelling including the development of a finite element and database-based system. Oertel's talk is entitled ***Virtual Tires: Requirements, Fields of Application, and Ways of Implementation.***



Dr.-Ing. Christian Oertel

Professor, Brandenburg University of Applied Sciences, Mechatronics will deliver a Plenary Lecture.

Michael Stackpole, founder & President, Stackpole Engineering Services, will deliver the second Plenary Lecture. Mike is an industry veteran having worked in the areas of tire/vehicle simulation development, tire testing and custom tire modeling at The Goodyear Tire & Rubber Company and Bridgestone Americas. The company he established has for 20 years provided engineering services in support of OEM vehicle and tire manufacturers, as well as, professional race programs, across the globe. Mike's talk is entitled ***The Evolution of Engineering Tools and the Virtual World in Motorsports: A Personal Story***.



Michael Stackpole
Executive Director, Global Virtual Design, Development & Validation, General Motors, will be the Keynote speaker.

Tire Society Conference News

Conference Registration Open

“The Virtual Tire” is the theme for this year’s [Conference on Tire Science and Technology](#) to be held **August 30 – September 3**. As it was last year, the Conference will once again be hosted as an online-only event. Save \$60 by taking advantage of Early Bird rates through July 31. Additional group discounts of 5% to 20% are available for organizations paying for five or more registration on a single company registration invoice.

As *the* scientific professional organization for the tire industry, the Tire Society welcomes all interested individuals to join in this 40th annual forum where researchers, policymakers, students, and industry advocates gather to exchange knowledge, communicate research results, and hear firsthand about the most advanced thinking from the scientific leaders who work at the boundary of the known and the unknown for tires.

Tire Society Conference News

Call for Papers

Papers are being accepted in the areas of Tire Industry Trends, Tire Performance, Data Science, Emerging Technologies, Tire/Vehicle System, Virtual Design, Tire/Road Interaction, and Tire Materials. Details regarding the submission requirements can be found at the Tire Society [Call for Papers](#) and [Author Information](#) web pages.

Individual Paper and Oral Presentation: Individuals or small groups of authors are encouraged to submit abstract proposals for papers whose content could be conveyed in **15-20 minutes** (including a question/answer period). *Paper presentations will be grouped*

Tire Industry Trends

Regulations & Standards,
Autonomous/Shared Vehicles,
Next Generation Mobility,
Sustainable Material Sourcing

Emerging Technologies

Smart Tires, RFID, Sensors, Tire
Electronics, Non-pneumatic Tires

Tire Performance

Durability, Rolling Resistance,
F&M, Testing, Tire Design

Tire Vehicle System

Vehicle Dynamics and Stability,
Ride, Harshness, Noise, Wear,
Rollover, Pull, Uniformity

into sessions with a common topic or theme. The Tire Society will provide a moderator for each session.

Panel Presentation: Small groups of authors are encouraged to submit 2-4 distinct but thematically linked presentation proposals as part of a panel discussion session. Presentations would be 5-10 minutes each, followed by a panel of the presenters. Panel presentations will be reviewed as a group. The Tire Society will provide a moderator for each session.

Poster Presentation: Individuals or groups of authors are encouraged to submit proposals for interactive poster presentations in which they can discuss their work with conference participants. Poster proposals will also be peer-reviewed.

Generally, presenters of papers are expected to also submit a technical paper for publication in the refereed Tire Science and Technology journal. In special cases, oral-only presentations may be accepted. Please contact the [program chairmen](#) if it is necessary to make special arrangements.

The deadline for submitting abstracts has been extended to **May 31, 2021**. The presentation materials submission deadline is **July 30, 2021**. To be eligible for the annual **Superior Paper** and **Honorable Mention** awards, manuscripts must be submitted for publication by **October 31, 2021** **EXCEPT** for the **Student paper manuscript** deadline of **August 27, 2021**.

Tire Society News

Xianwei Meng elected as Tire Society Treasurer

The Tire Society is happy to announce the election of Xianwei Meng to serve as the Tire Society's Treasurer through the term ending September 2022. Xianwei, a Tire Society member and a longtime mechanical engineer at Goodyear Tire and Rubber Company, had been appointed by the Executive Committee to serve as the interim Treasurer until arrangements could be organized for a Special Election that ran from March 12 until May 10th. The Treasurer's office became vacate when the Society's previous Treasurer, Madhu Rao, became ineligible to serve (according to the statutes of the State of Ohio) when his career change motivated a relocation to California.



Xianwei Meng

Data Science; Big Data

Tire/Vehicle Performance, Materials/Lab Data, Simulation Results, Manufacturing Processes and Intelligent Factory

Virtual Design

Tire Modeling and Model Characterization, Constitutive Models, Virtual Prototyping, Advancements in Tools and Techniques

Tire Materials

Polymers, Cords, Steel, Green & Cured Rubber, Material Characterization, Tire Lifecycle

Tire Road Interaction

Friction, Noise, Wear, Tire Effects on Pavement

Vision of a Digital Twin of the Road-Tire-Vehicle System for Future Mobility

Kaliske, M.; Behnke, R.; Wollny, I., *Tire Science and Technology*, TSTCA (2021) 49 (1): 2–18.



As announced in the previous newsletter, the Tire Society's scientific journal, **Tire Science and Technology**, has launched a Hybrid Open Access / Subscription publishing model in which authors may choose whether their reviewed and accepted-for-publication articles can be made available to readers at no cost. The following abstract is for an article recently published under the Hybrid Open Access model.

length scales



time scales

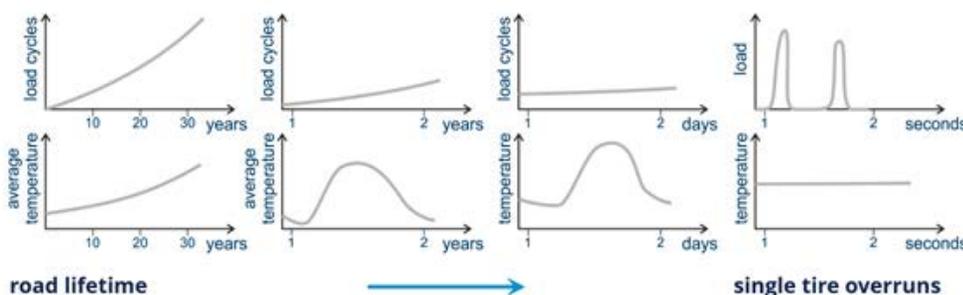


Figure 4. Relevant length scales (from road system to single materials) and time scales (from years to seconds) for physical modeling of the road system.

Innovative trends such as autonomous cars and smart vehicles have gained increasing attention and will form a new mobility technology. At the same time, the appearance of smart tire systems will give rise to better tire performance, better vehicle control, and the enhancement of current intelligent systems for autonomous vehicles. In contrast, innovations for the road system, which must carry the increasing traffic loads, have been rare in recent years. However, to solve current and future challenges of mobility related to road transport (e.g., durability, safety, efficiency, ecology, cost, etc.), the potential for innovative trends and digitalization of all interacting components—vehicle, tire, and road—should be used to change the industrial ecosystem and paradigm of transport in human life. The vision of a digital twin of the road system, which is the digital/virtual image (reality model in space and time) of the vehicle, tire, and roadway, would enable, among other aspects, the future pioneering condition predictions of single components (ranging from manufacturing, service to failure state), targeted traffic control, optimal synthesis of building materials and structures, interfaces to automated driving, as well as reduction in emissions. The digital twin of the road system contains and combines all available and relevant information about the “road of the future” system from

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(*cont.*) physical examinations and modeling as well as from data-driven models and further available data (e.g., real-time sensor data from the vehicle, tire and road sensors, data models, etc.). This contribution presents the current state of research, tasks, and challenges toward achieving the digital twin of the road system as well as the potential of the digital twin for future mobility.

Thanks to our 2021 Conference Sponsors:

V-Rated



H-Rated



T-Rated



Information on 2021 Tire Society conference sponsorship opportunities may be found [here](#).

We appreciate our Promotional Partners:

See the [article](#) about the 2020 Tire Society Conference in Rubber & Plastics News and the [preview](#) of the 2021 Tire Society Conference published in Tire Business, both from Crain Communications.

Rubber & Plastics News

TIRE BUSINESS

And we appreciate the year over year collaboration of Pin365/TyreTrends and TyrePress.



The Tire Society Business Office
tst@allenpress.com | 1-785-865-9403
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