Special Issue

Brake Wear Particulate Matter and Mitigation Strategies

Message from the Guest Editors

Non-exhaust particle emissions (including tyre, road, and brake wear) are projected to be dominating particle emissions from road traffic at least when modern vehicle fleets are examined. Exhaust particle emission levels are regulated and were significantly reduced in the last decades. In contrast, non-exhaust emissions are expected to further increase due to the increase in traffic. At the same time, the EU plans to include brake wear particle emissions in the upcoming EURO 7 emission standards legislation. This special issue is trying to summarize the current state-of-the-art in the field of brake wear particle emissions. This includes basic research of the tribological formation mechanisms, progress on standardization efforts for measuring Particle Mass (PM) and Particle Number (PN) emissions from different types of brakes in a repeatable and reproducible way, as well as the influence of brake wear mitigation measures. Here, a special focus is given on regenerative braking and its potential to reduce PM and/or PN emissions compared to fully conventional ICE vehicles. Finally, the influence of possible future technologies in reducing brake emissions will be examined.

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Message from the Editor-in-Chief

Continued developments in instrumentation and modeling have driven atmospheric science to become increasingly more complex with a deeper understanding of concepts, mechanisms, and interactions. This is the field that innovation built and it has led to a better appreciation for the complexity with atmosphere. Human life is intertwined in this complexity as we strive to better understand our atmosphere. Climate change is constantly stretching the limits of our thinking and forcing new ideas and concepts to be played out. Welcome to the Anthropocene!

Editor-in-Chief

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