

*VDI Baden-Baden*

## **Efficient Downsizing Engine Technologies for Real World Driving**

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### **ABSTRACT**

Compared to legislative drive cycles, the increased operating residency at higher engine load and speed sites during real world driving, alongside the restricted compression ratios with highly downsized, i.e. boosted engines has led to an increased sensitivity of vehicle fuel consumption.

Maximising engine efficiency at high load therefore is critical to enable further reductions in CO<sub>2</sub> emissions across the board. In order to take downsizing further and gain the full potential of the fuel consumption benefits, as well as to maintain these benefits over a wide range of applications, this paper highlights the results of thorough research investigations conducted by MAHLE into selective advanced technologies complementary with downsizing; such as base engine design, advanced charge air cooling and EGR.