

5th International Conference and Exhibition on

Automobile and Mechanical Engineering

September 20-21, 2018 | Rome, Italy

Friction in automotive engines: Recent developments in advanced testing and accurate simulation

Hannes Allmaier

Virtual Vehicle Research Center, Austria

Fuel consumption and the corresponding emissions are in focus of legislation worldwide. Also for the customers these are highly sensitive topics. Consequently, reducing fuel consumption is top priority for the OEMs (Original Equipment Manufacturers). Among the various possibilities to reduce fuel consumption, reducing powertrain friction is a very effective and economic measure to reduce fuel consumption. However, the internal combustion engine is already highly optimized and it requires the combination of many small optimizations to yield a significant improvement. Consequently, state-of-the-art testing facilities to accurately measure even small friction changes are needed. To derive further optimizations, advanced simulation methodology is required that allows to reliably predict friction optimizations while safely avoiding detrimental effects like excessive wear that could have a negative impact on engine lifetime. Recent developments in highly accurate engine friction testing and simulation will be presented and discussed in detail.

hannes.allmaier@v2c2.at