
Abstract:
Temporally resolved flow fields are commonly averaged in time, and mostly the time-averaged flow fields and forces are used for the aerodynamic optimization of road vehicles. Online DMD is found to be well suited for studying transient flow effects and leads to a deeper understanding of the complex flow around the vehicle. The investigated velocity field is computed by a Detached Eddy Simulation of the DrivAer reference body. The CFD setup and key considerations for the application of online DMD on large data sets are outlined, and the most dominant extracted coherent flow structures are analyzed independently.

Stichworte: 
heat · fluid; computational fluid dynamics; aerodynamic performance; Dynamic Mode Decomposition

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