

Workshop Speaker



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Title: Gasoline Engine Modeling and Control

Abstract: The recent automotive engine control system development requires more sophisticated and complex control strategies and handling more data. It would lead to a continuous and exponential increase of human resources and development time.

Model Based Development (MBD) based on controller and plant models is widely regarded as the direction to mitigate the complexity issue of automotive control system development. However, MBD has the issue of not being able to provide plant models to developments timely.

In this tutorial, a desired modeling environment will be described. At first, we clarified the definition of physical and empirical models. Physical model will be used to reduce experiments and make empirical model identification easy and then we combine with empirical models to physical models. The environment is required to treat Multi Physical domains. One solution of the rapid modeling is model description based on the considered conservation laws and the constraints (HLMD) and equation generation and simplification from HLMD (HLMT).

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