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Mission Analysis; 2.4 Driver Behavior and Road Modeling; 2.4.1 Simple Driver Model; 2.4.2 Road Modeling; 2.5 Mission Simulation; 2.5.1 Methodology
2.6 Vehicle Characterization/Characteristics 2.6.1 Performance Measures; 2.7 Fuel Consumption; 2.7.1 Energy Density Weight; 2.7.2 From Tank to Wheel-Sankey Diagram; 2.7.3 Well-to-Wheel Comparisons; 2.8 Emission Regulations; 2.8.1 US and EU Driving Cycles and Regulations; Chapter 3 Powertrain; 3.1 Powertrain Architectures; 3.1.1 Exhaust Gas Energy Recovery; 3.1.2 Hybrid Powertrains; 3.1.3 Electrification; 3.2 Vehicle Propulsion Control; 3.2.1 Objectives of Vehicle Propulsion Control; 3.2.2 Implementation Framework; 3.2.3 Need for a Control Structure; 3.3 Torque-Based Powertrain Control 3.3.1 Propagation of Torque Demands and Torque Commands 3.3.2 Torque-Based Propulsion Control-Driver Interpretation; 3.3.3 Torque-Based Propulsion Control-Vehicle Demands; 3.3.4 Torque-Based Propulsion Control-Driveline management; 3.3.5 Torque-Based Propulsion Control-Driveline-Engine Integration; 3.3.6 Handling of Torque Requests-Torque Reserve and Interventions; 3.4 Hybrid Powertrains; 3.4.1 ICE Handling; 3.4.2 Motor Handling; 3.4.3 Battery Management; 3.5 Outlook and Simulation; 3.5.1 Simulation Structures; 3.5.2 Drive/Driving Cycle; 3.5.3 Forward Simulation 3.5.4 Quasi-Static Inverse Simulation 3.5.5 Tracking; 3.5.6 Inverse Dynamic Simulation; 3.5.7 Usage and Requirements; 3.5.8 Same Model Blocks Regardless of Method; Part II Engine-Fundamentals; Chapter 4 Engine-Introduction; 4.1 Air, Fuel, and Air/Fuel Ratio; 4.1.1 Air; 4.1.2 Fuels; 4.1.3 Stoichiometry and (A/F) Ratio; 4.2 Engine Geometry; 4.3 Engine Performance; 4.3.1 Power, Torque, and Mean Effective Pressure; 4.3.2 Efficiency and Specific Fuel Consumption; 4.3.3 Volumetric Efficiency; 4.4 Downsizing and Turbocharging; 4.4.1 Supercharging and Turbocharging
Chapter 5 Thermodynamics and Working Cycles

Sommario/riassunto

A reference guide to modeling, analysis, and control of engines and drivelines A reference manual for engineers and an introduction for students in the areas of modeling, analysis, and control of engines and drivelines Covers the basic dynamics of internal combustion engines and drivelines Discusses the goals that engine control design system aims for, and how these targets can be achieved Provides a set of standard models and includes examples and case studies Includes an overview of hybrid vehicles and powertrains Accompanied by a website
