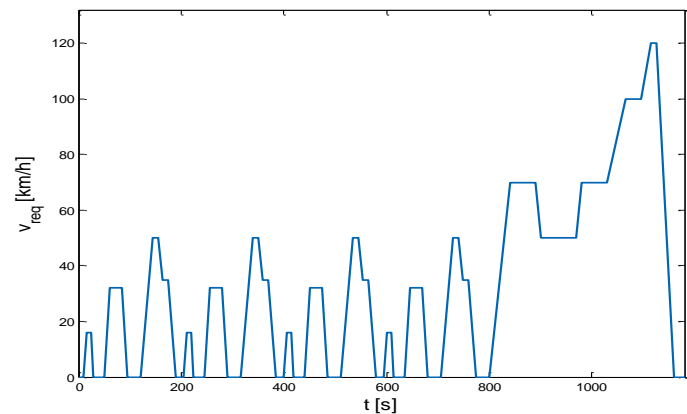


ANALYSIS OF THE ENERGY EFFICIENCY OF DIFFERENT POWERTRAINS IN DRIVING CYCLES

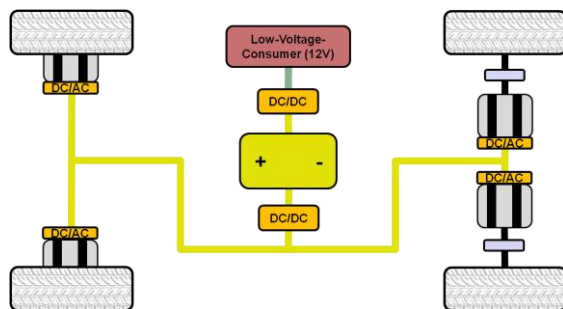
The contemporary determination of a vehicle's fuel/energy consumption will generally be done by driving some pre-defined velocity profiles. These profiles are called driving cycles and should deliver reproducible and comparable results of the consumption measurement. In consideration of the specific traffic situations in different countries the valid driving cycles would be specified by various authorities in each country or region of the world.

In addition to that the actual development in the automotive industry aims at short-term introduction of battery electric vehicles (BEV) in the emerging markets (e.g. China, Brasil).



New European Driving Cycle (NEDC)

Therefore this work is aimed to provide a detailed analysis of different powertrain types like conventional combustion engines, hybrid and pure electric vehicles by simulating these concepts in different driving cycles with the simulation tool MATLAB/SIMULINK and comparing a couple of characteristic results.



Scheme of an electric Powertrain

This work is composed of the following subtasks:

- Literature research on contemporary driving cycles and vehicle powertrains
- Identification of the relevant characteristics and differences of these concepts
- Getting familiar with MATLAB/SIMULINK and implementation of an automated analysis method
- Short documentation and presentation of the thesis