

Contents

- [IEEE-VTS Motor Vehicles Challenge 2025](#)
- [Plot of results](#)
- [Electric motor power](#)
- [Battery and supercapacitor](#)
- [Tug speed](#)
- [Traction and resistive force](#)
- [Motor and propeller torque](#)

IEEE-VTS Motor Vehicles Challenge 2025

Energy Management and Control of a Marine Electric Propulsion System

The simulation time is calculated in minutes and seconds

Simulation Results: MVC2025

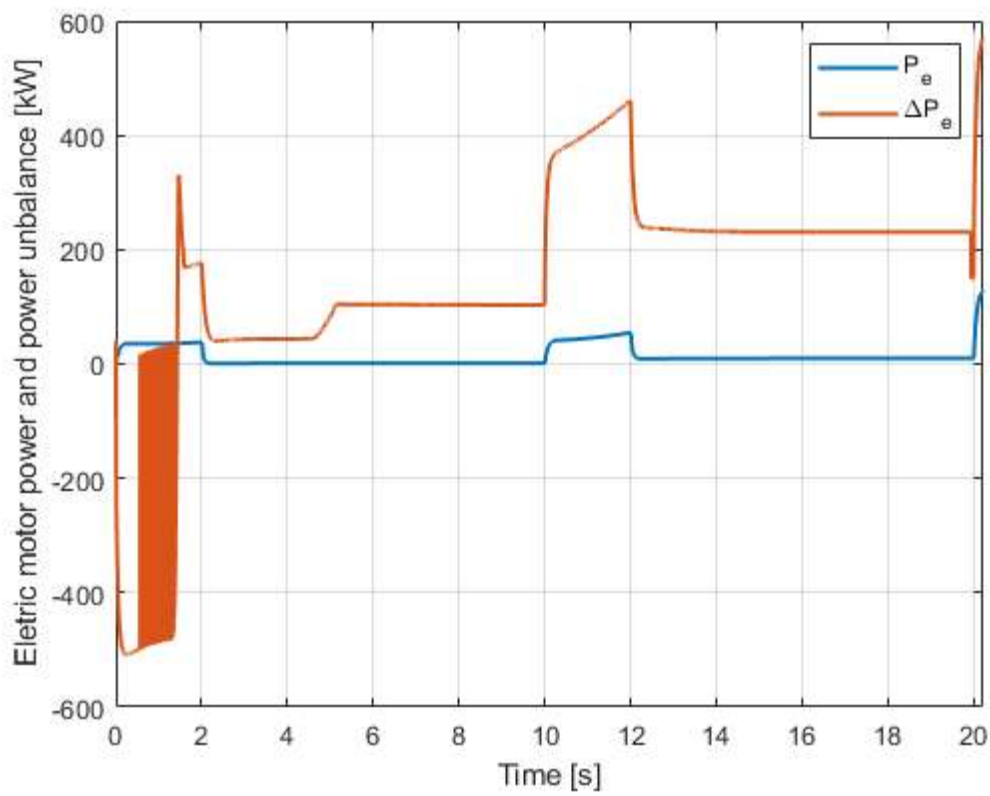
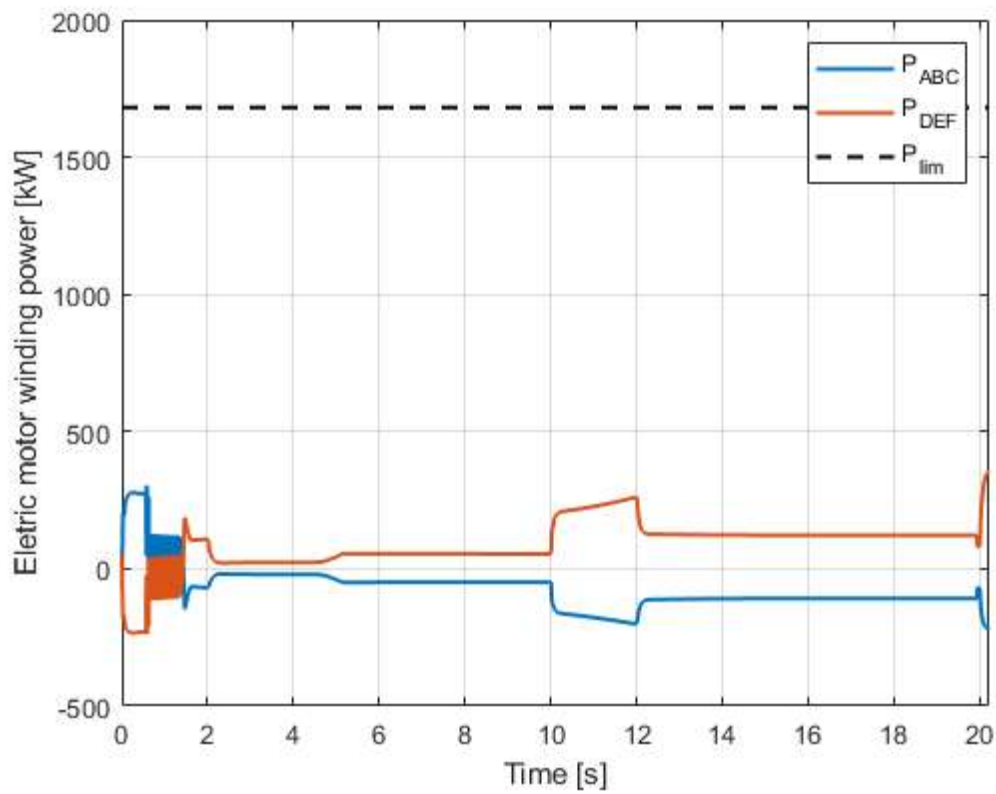
The FINAL SCORE is: 198.615788

Final State-of-Charge of battery subsystem: 96.458986%
Final State-of-Energy of supercapacitor subsystem: 0.999108%

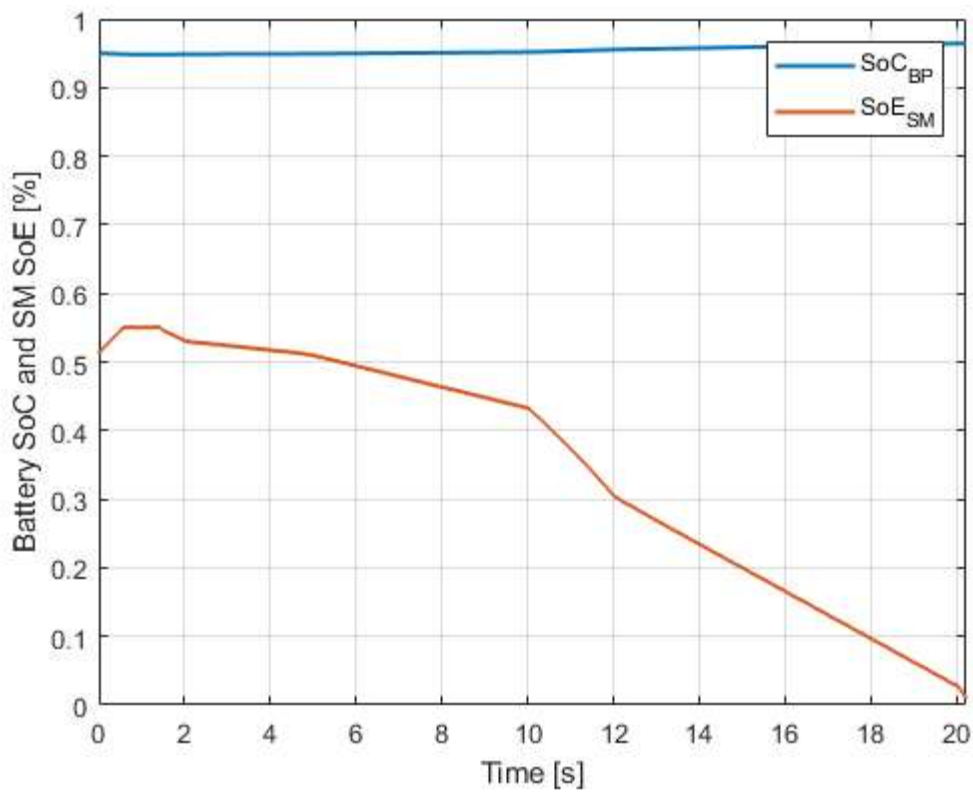
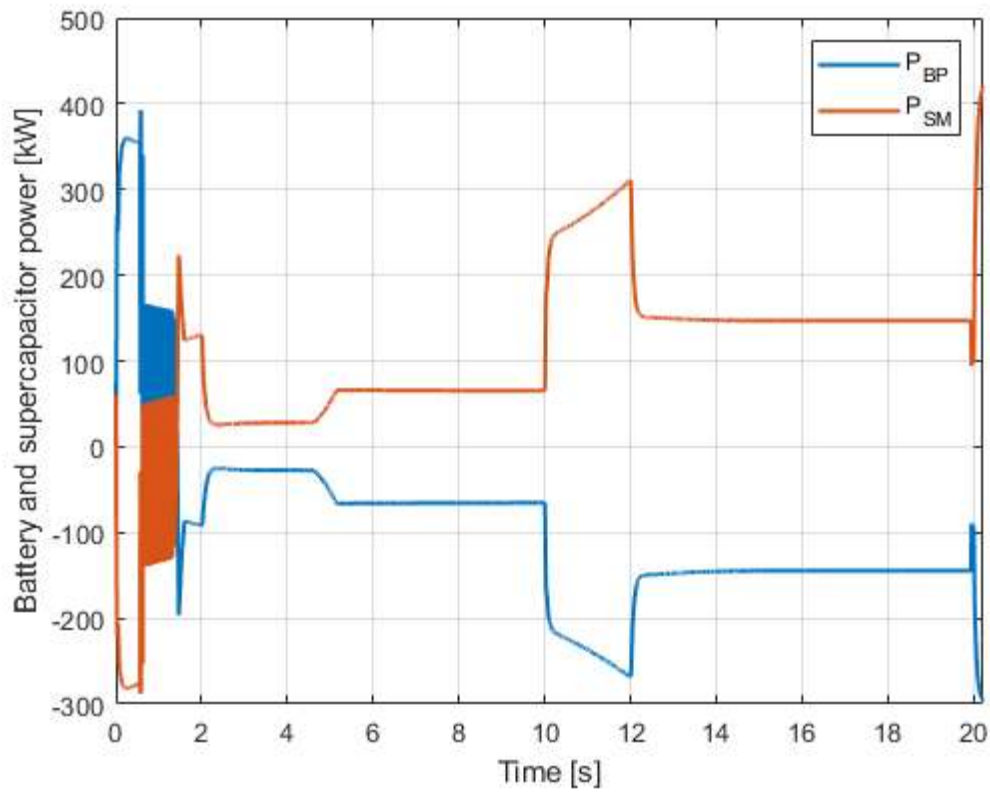
Impact of each cost function term on the final score:
Battery current fluctuation impact on total cost: 100.232026%
Energy consumption impact on total cost: -0.378360%
DTP-PMSM overloading impact on total cost: 0.000000%
DTP-PMSM winding exploitation impact on total cost: 0.146334%
Elapsed time: 0 minutes, and 40.44 seconds

Plot of results

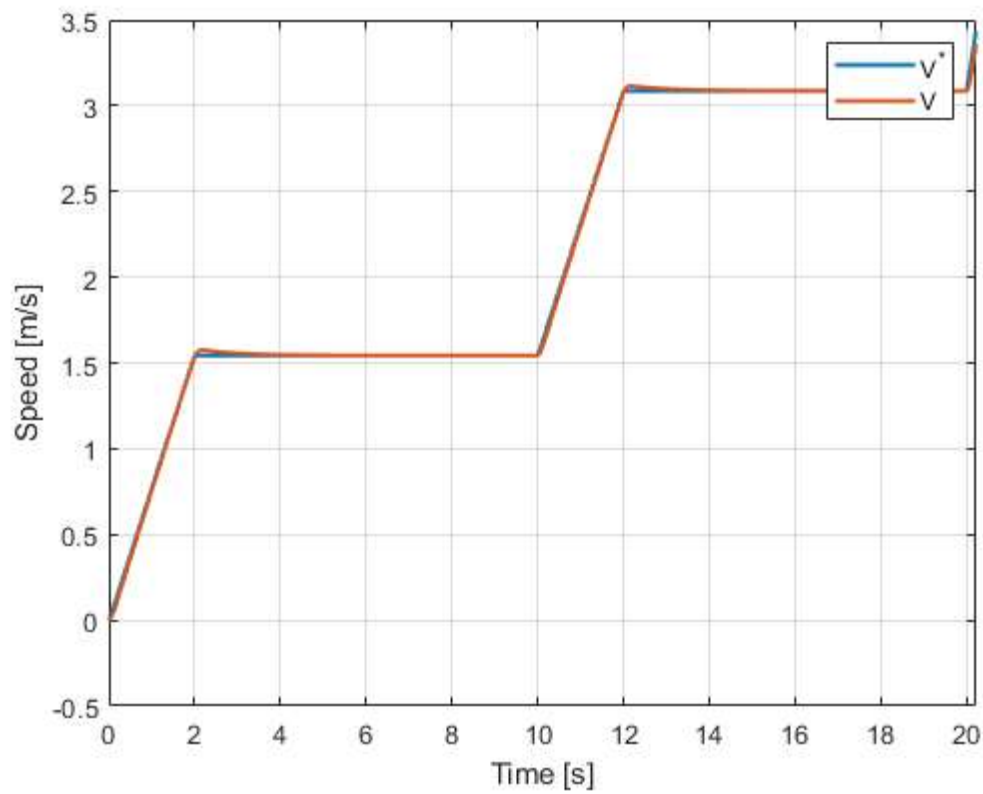
Electric motor power



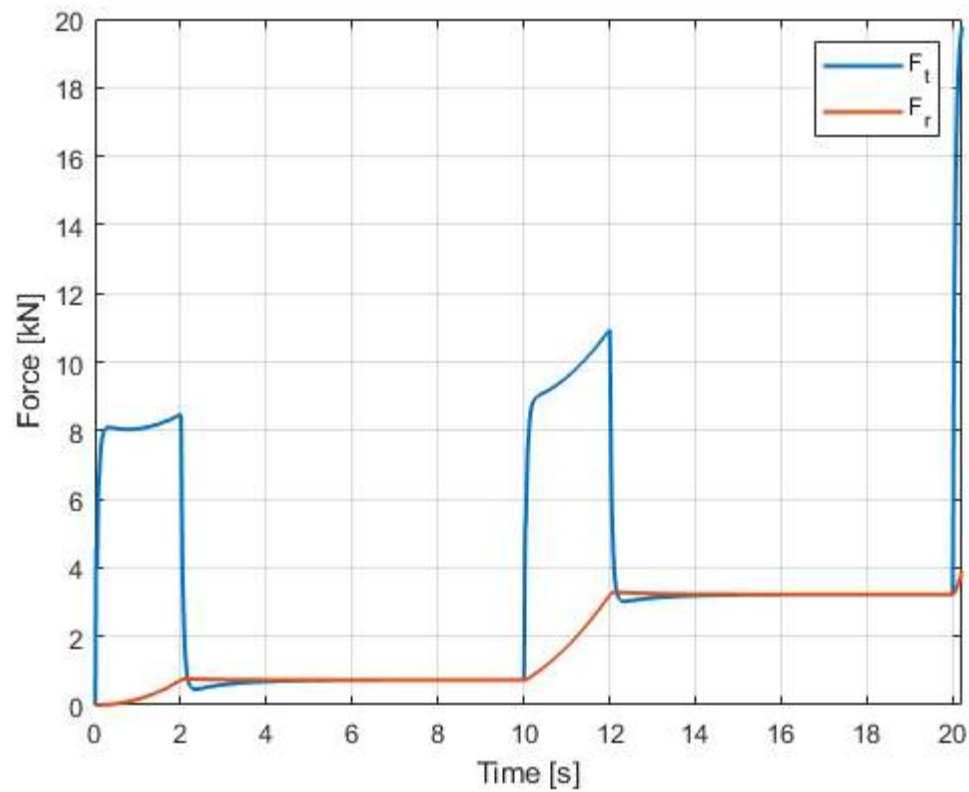
Battery and supercapacitor



Tug speed



Traction and resistive force



Motor and propeller torque

