STEAM-LEDET

Report

Magnet name: MQY_8Coils
Simulation number: 576

Input file: D:\Federica_PC\LEDET\MQY_8Coils\Input\MQY_8Coils_576.xlsx

startLEDET file: D:\Federica_PC\LEDET\startLEDET.xlsx

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Main simulation results

startLEDET file: D:\Federica_PC\LEDET\startLEDET.xlsx
Input file: D:\Federica_PC\LEDET\MQY_8Coils\Input\MQY_8Coils_576.xlsx

Magnet name: MQY_8Coils
Simulation number: 576

Adiabatic hot-spot temperature: 58 K in group # 47
Quench load: 1.29 MIIt in group # 1

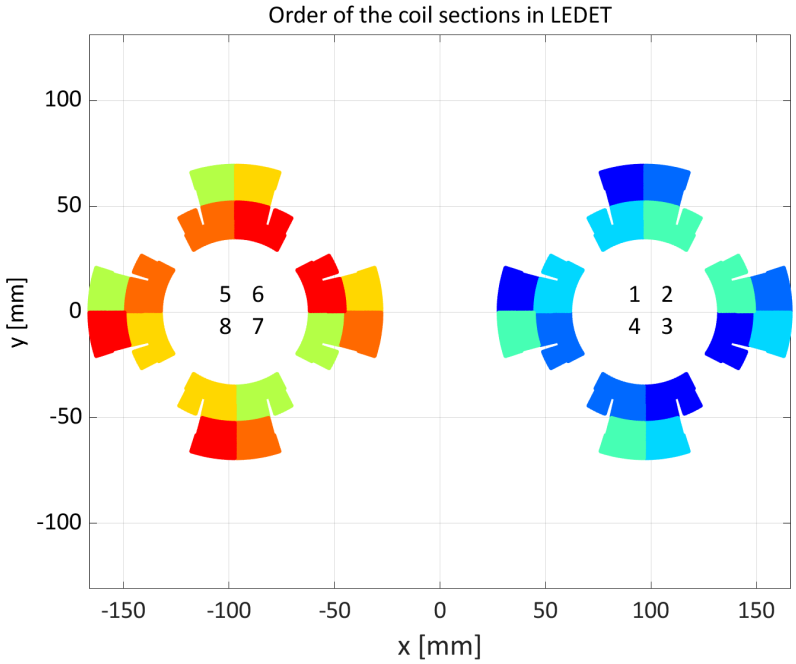
Average IFCL energy per unit of conductor (no insulation) deposited during the transient: 49 mJ/cm^3
Total IFCL loss deposited during the transient: 1388 J

Energy extracted in the EE system during the transient: 112.138 kJ
Fraction of magnet energy extracted in the EE system during the transient: ~38%

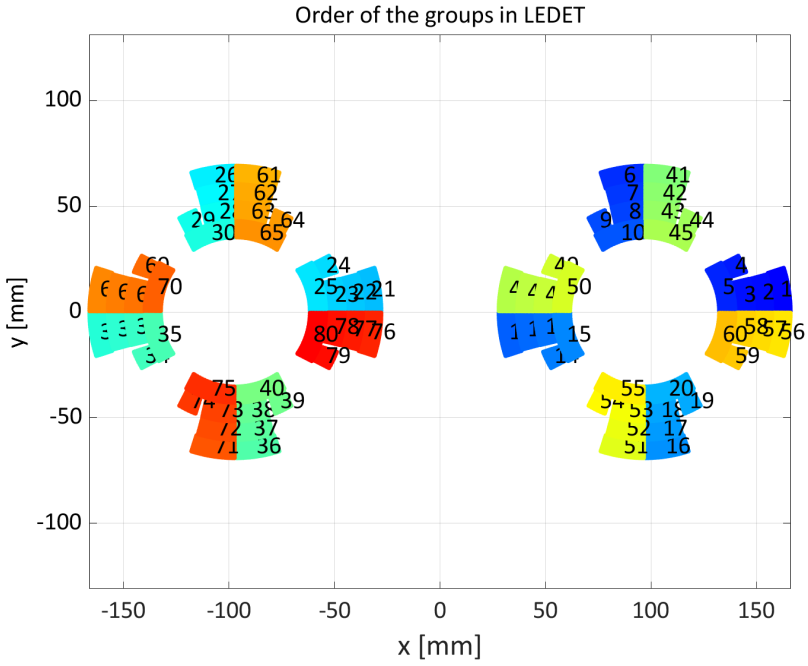
Peak current is 1 times the initial value.
Peak magnetic field is 1 times the initial value.

Peak temperature in the windings at the end of the discharge: 47 K.
Minimum temperature in the windings at the end of the discharge: 17 K.
Average temperature in the windings at the end of the discharge: 36 K.
Standard deviation of the temperature in the windings at the end of the discharge: 10 K.
Temperature variation in the windings at the end of the discharge: 29 K.

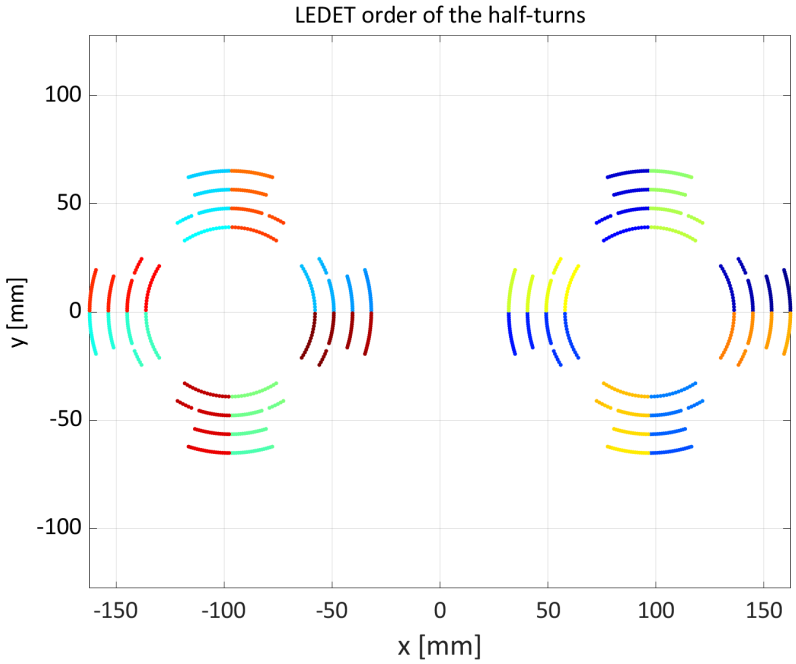
Order of coil sections in LEDET



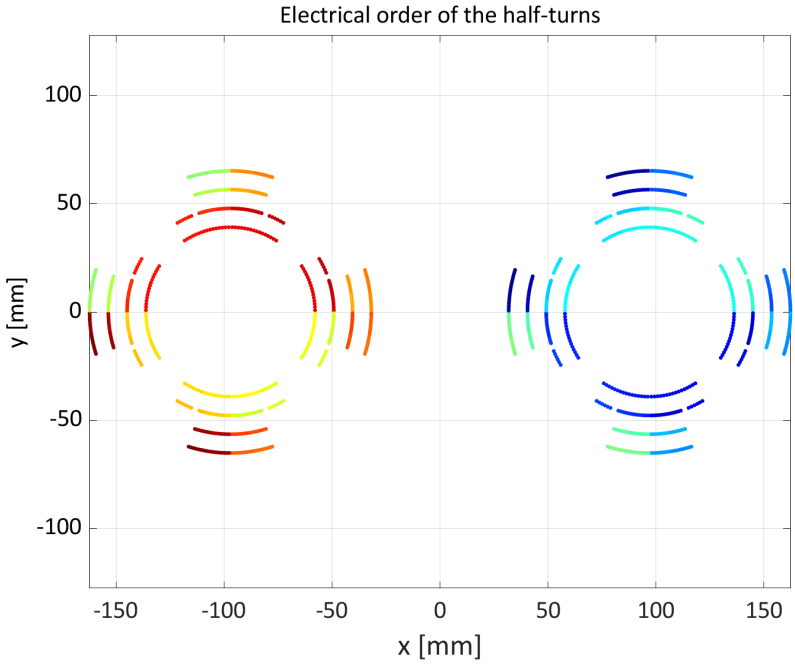
Order of groups in LEDET



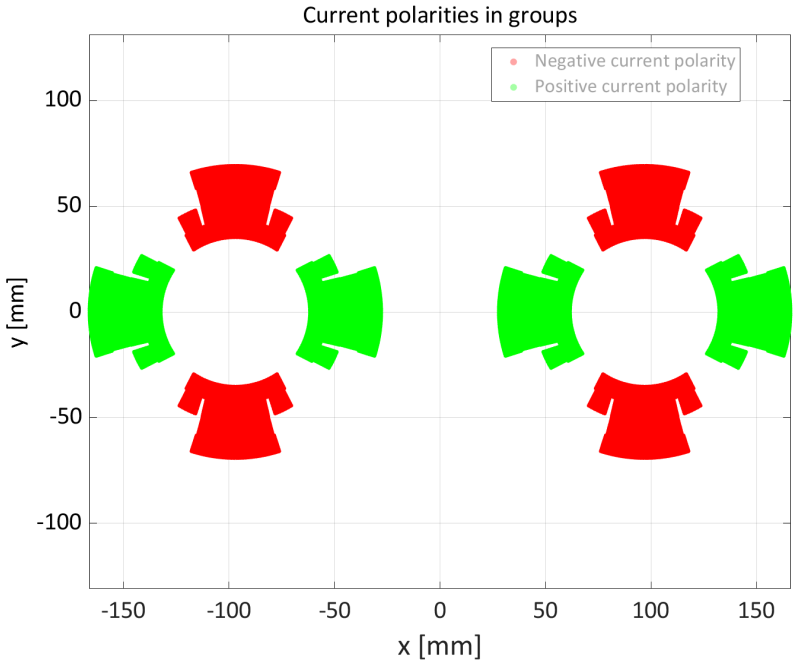
Order of half-turns in LEDET



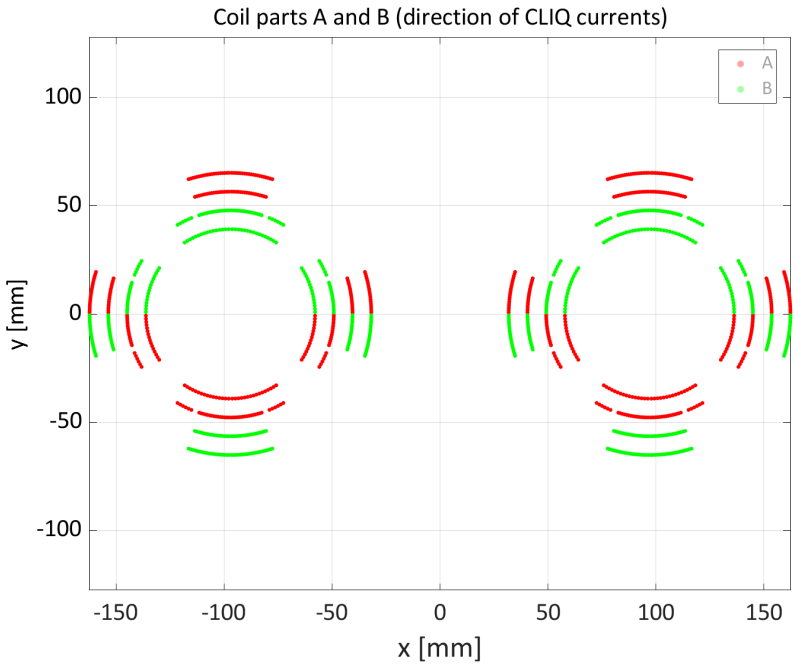
Electrical order of the half-turns



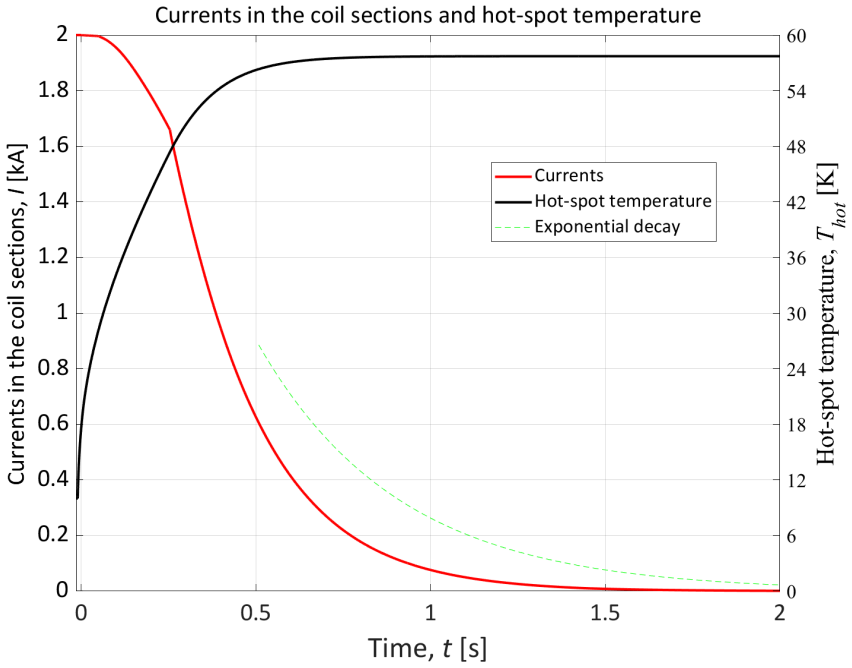
Current polarities in group



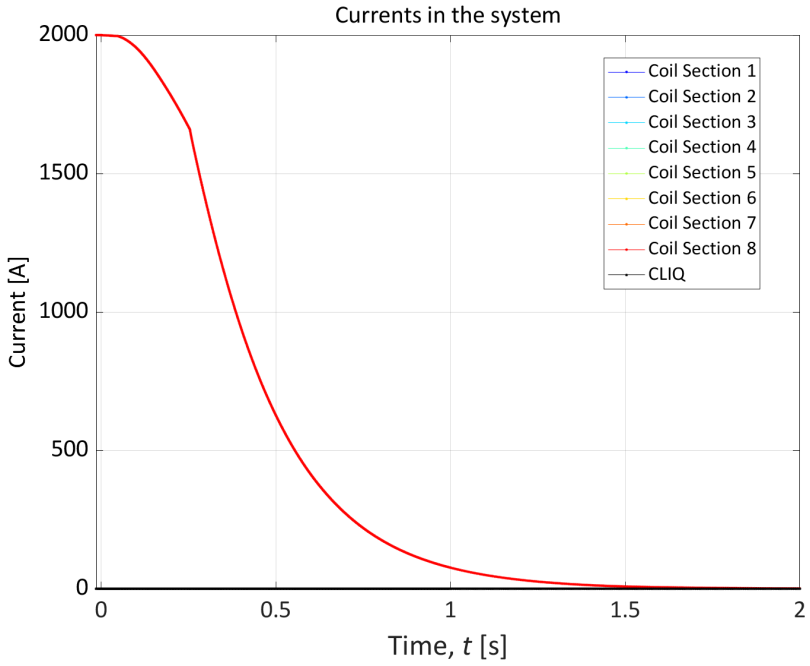
Coil parts A and B



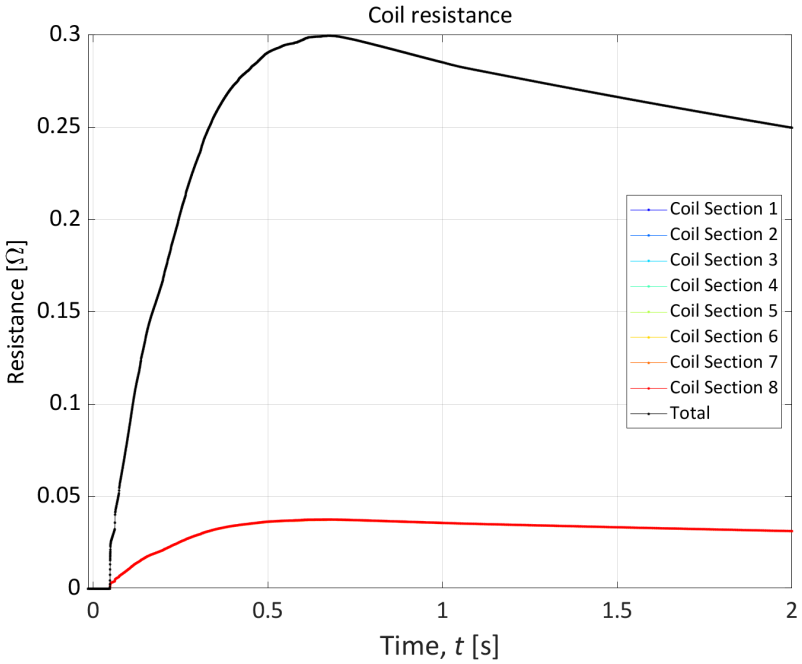
Currents in the coil sections and hot-spot temperature



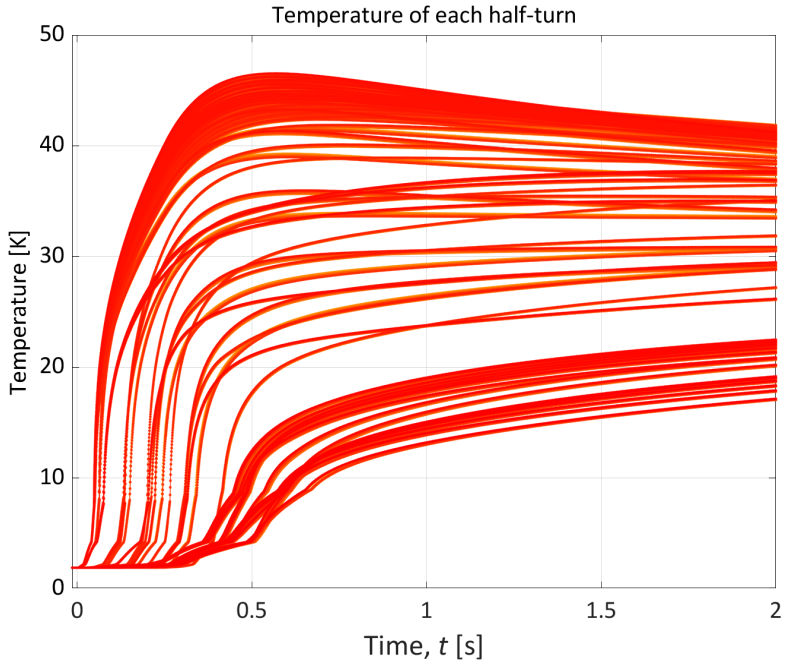
Currents in the system



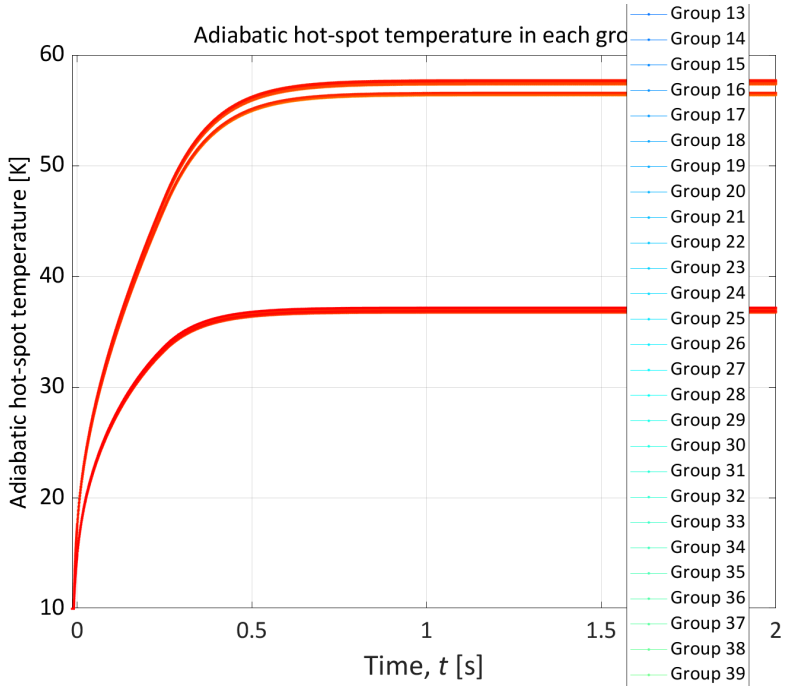
Resistances of coil sections and total coil resistance



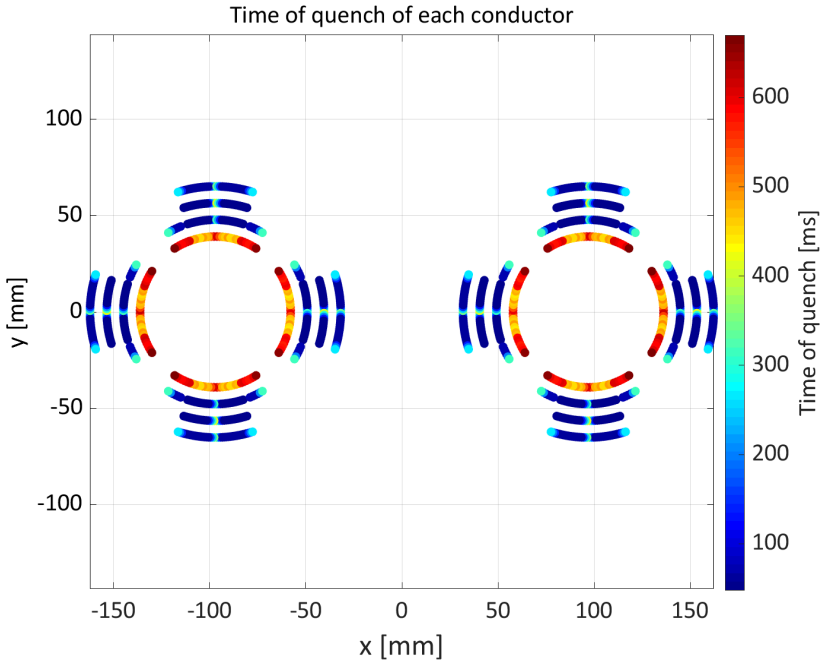
Temperature of each half-turn



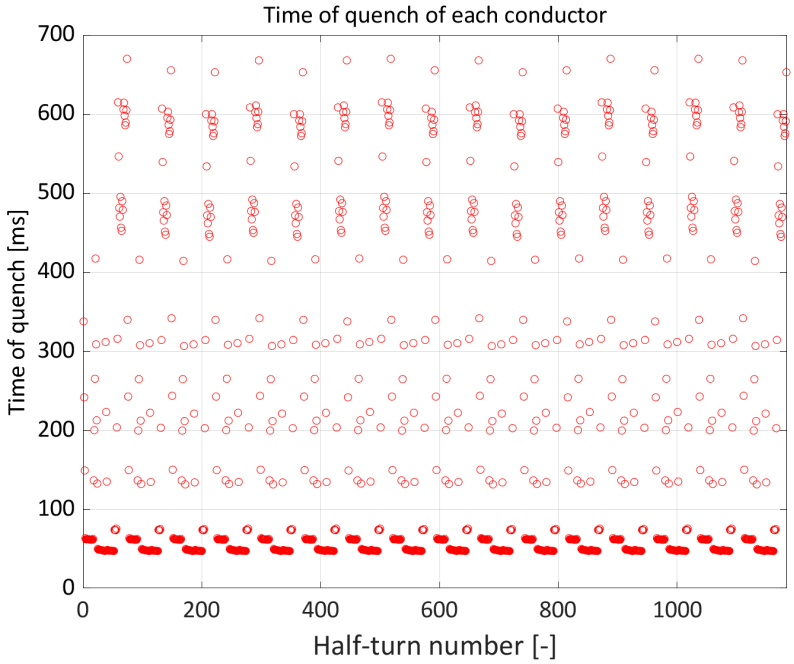
Adiabatic hot-spot temperature in each group



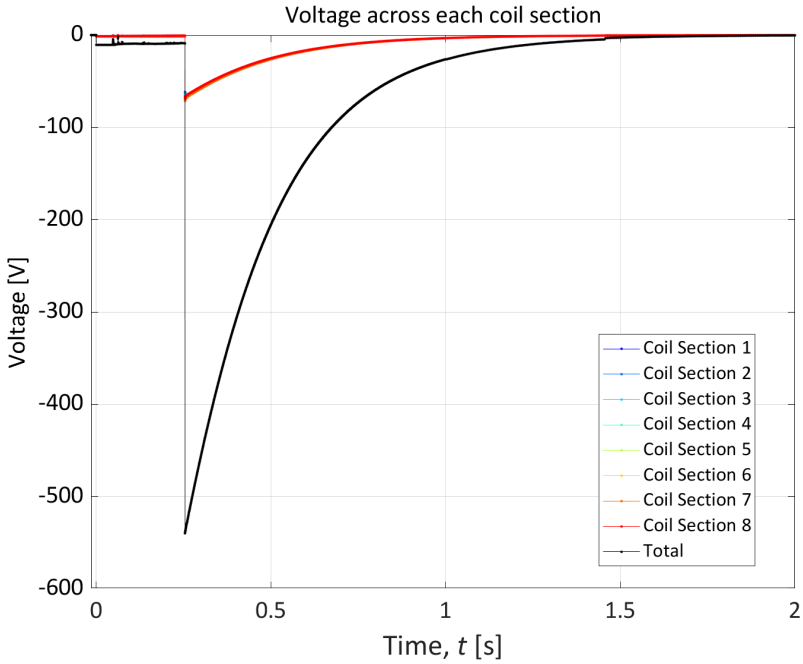
Time of quench of each conductor



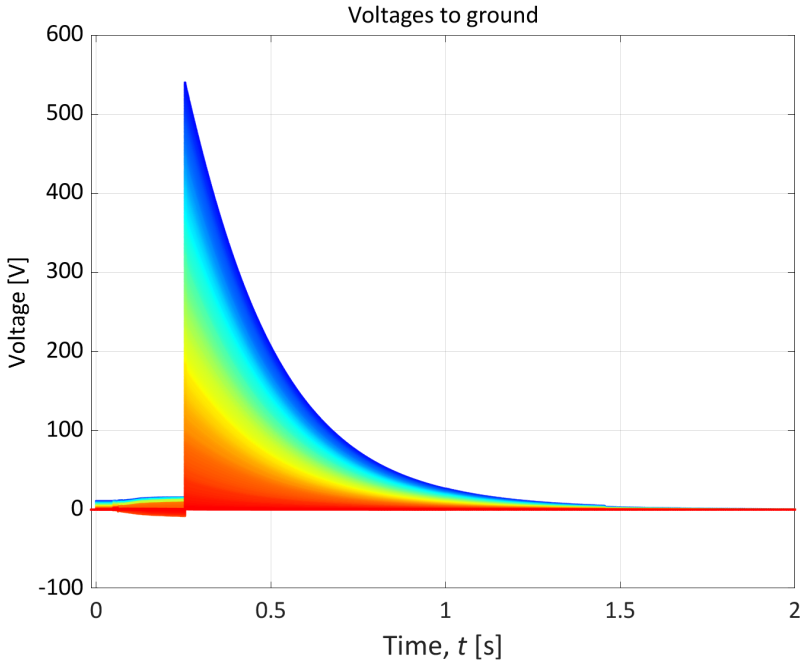
Time of quench of each conductor



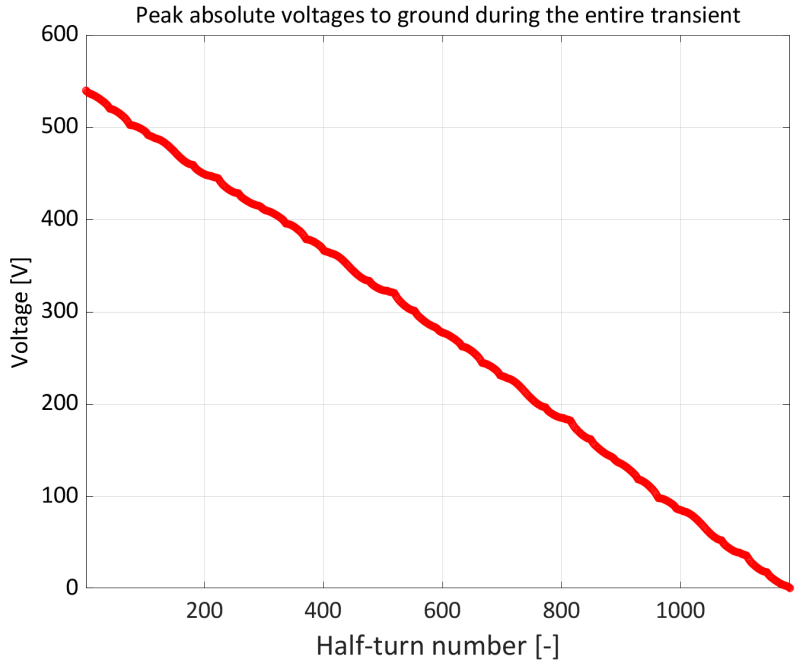
Voltage across each coil section, and across the magnet



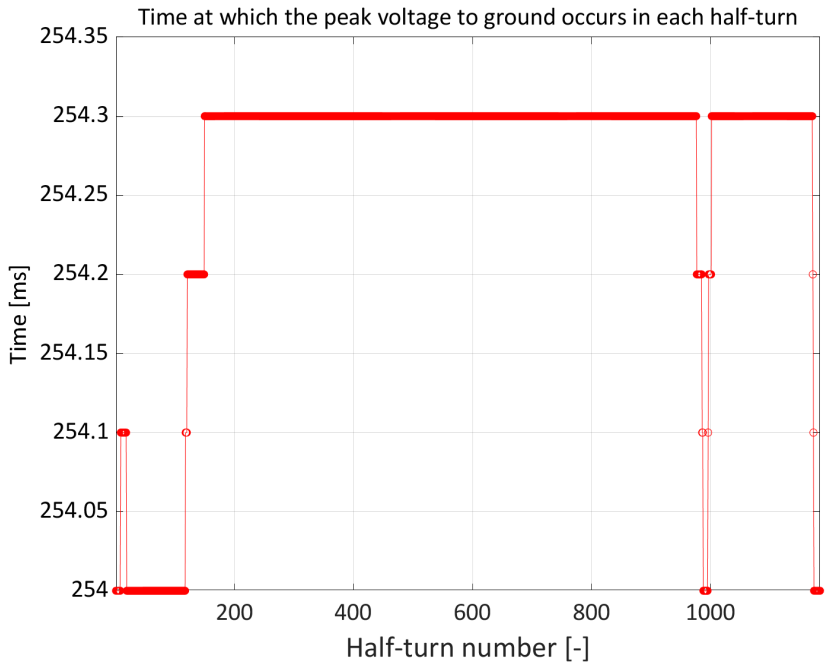
Voltages to ground after each half-turn



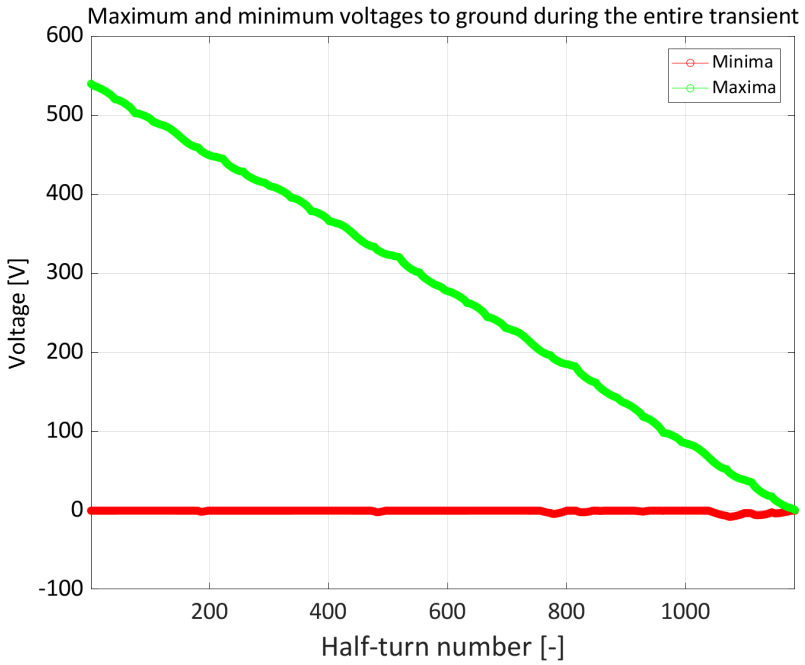
Peak absolute voltages to ground during the entire transient



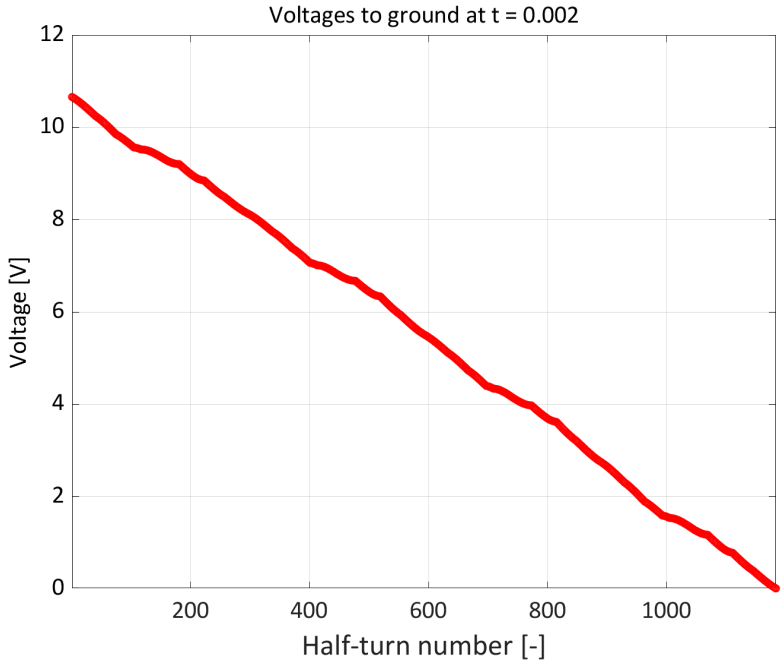
Time at which the peak voltage to ground occurs in each half-turn



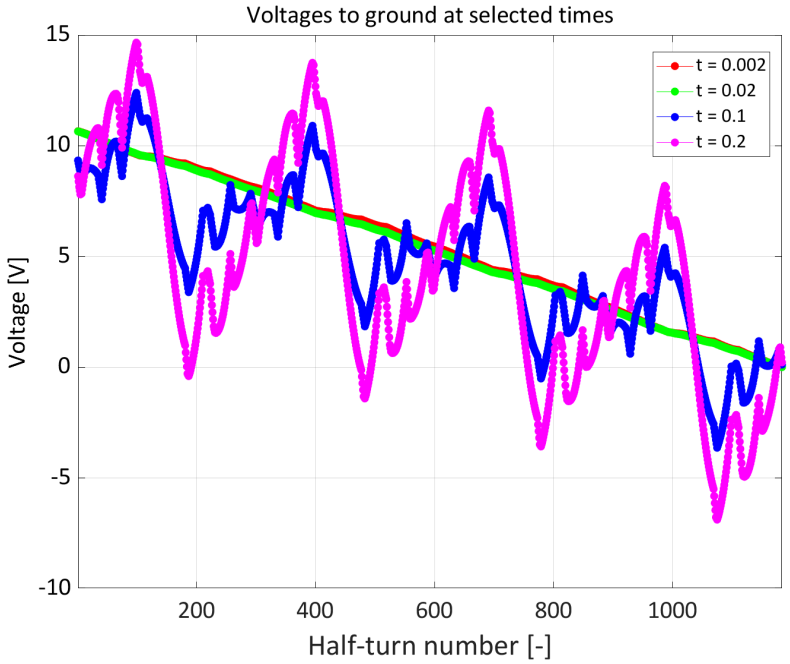
Maximum and minimum voltages to ground during the entire transient



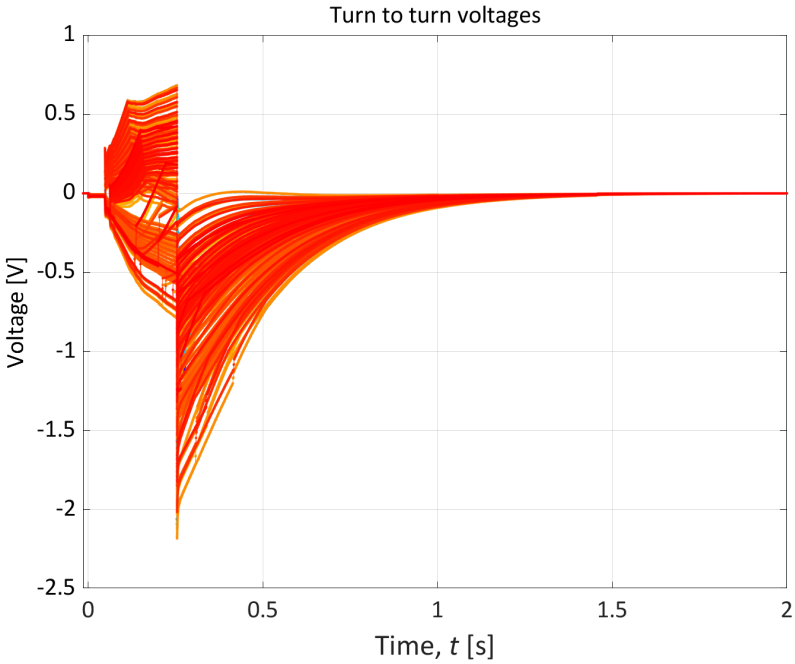
Voltage to ground at a selected time



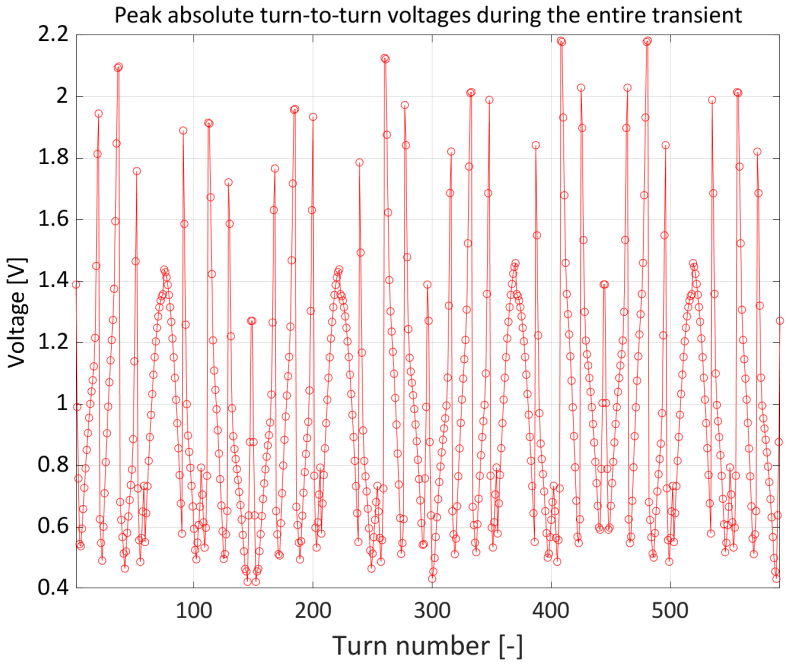
Voltage to ground at multiple selected times



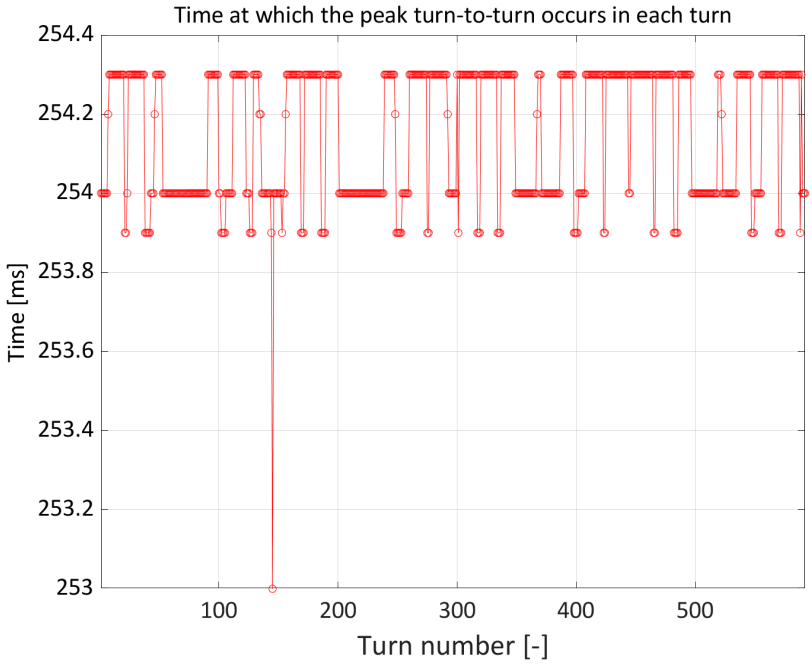
Turn-to-turn voltages



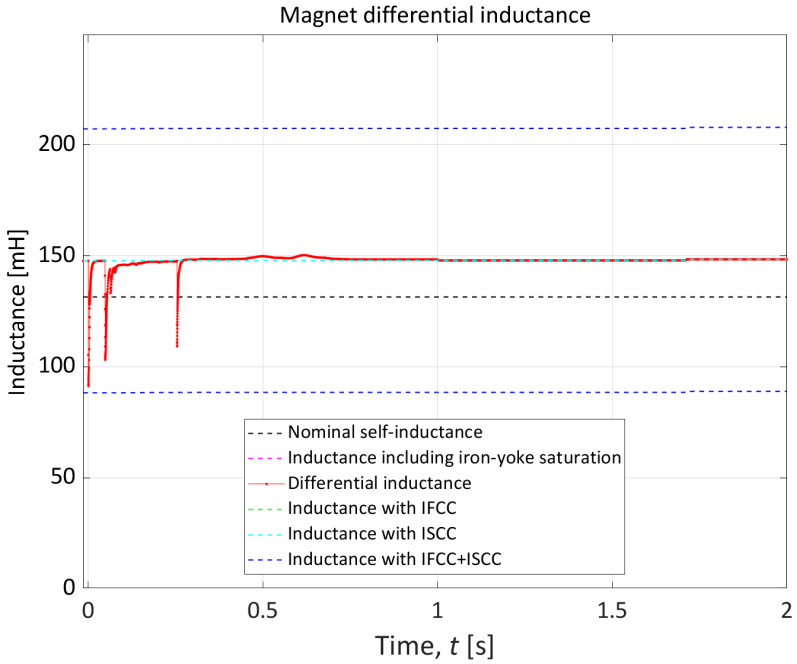
Peak absolute turn-to-turn voltages during the entire transient



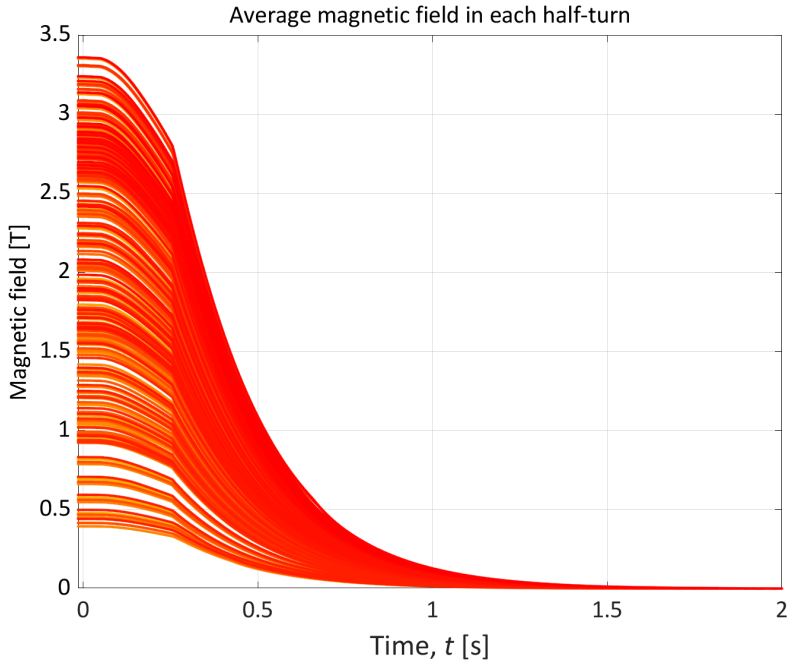
Time at which the peak turn-to-turn occurs in each turn



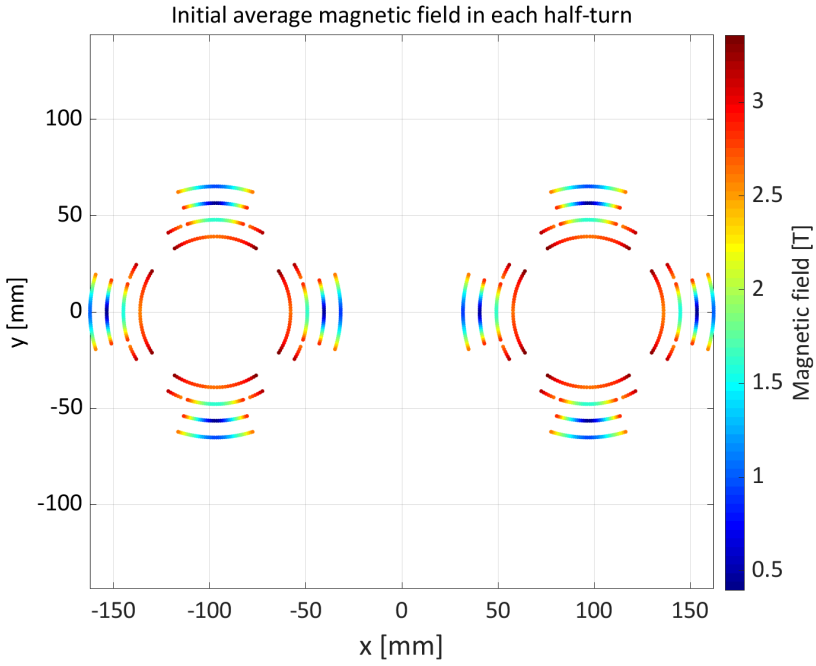
Magnet differential inductance



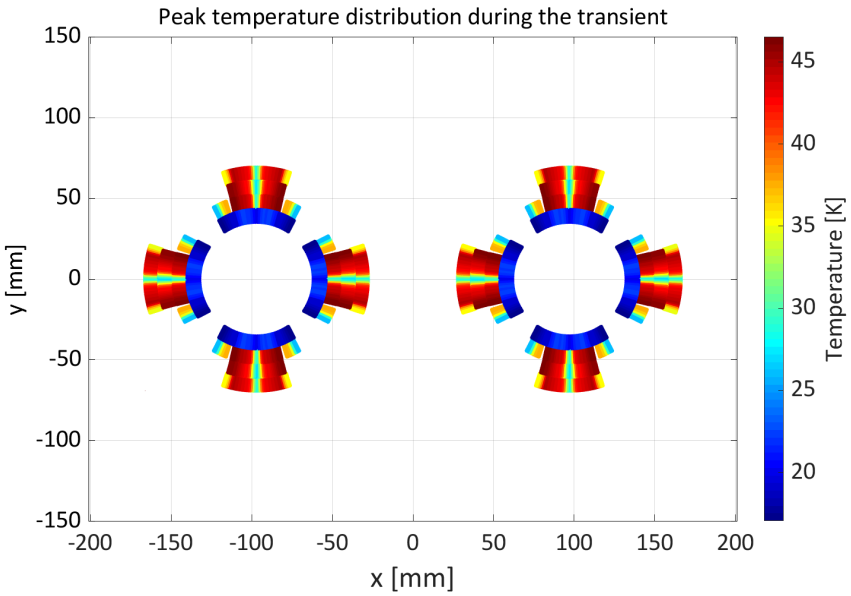
Average magnetic field in each half-turn



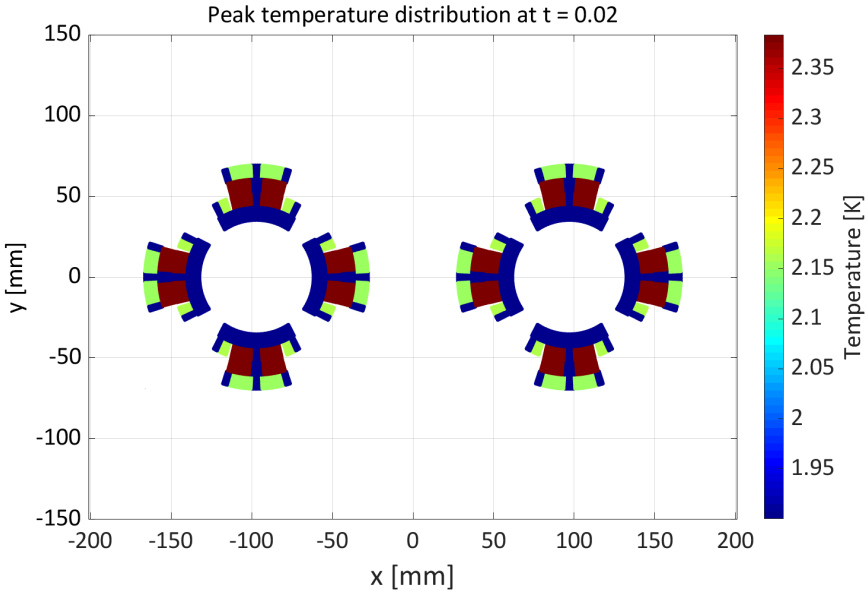
Initial average magnetic field in each half-turn



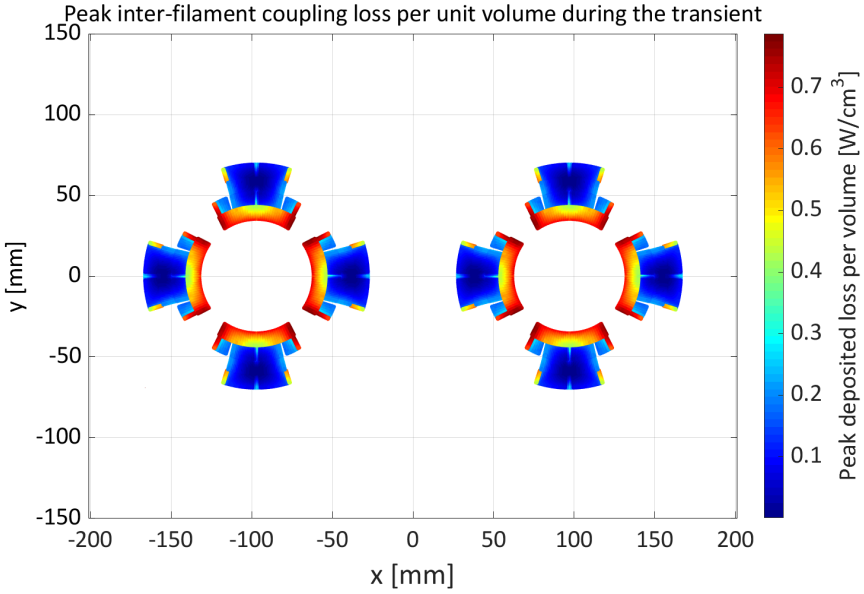
Peak temperature distribution during the transient



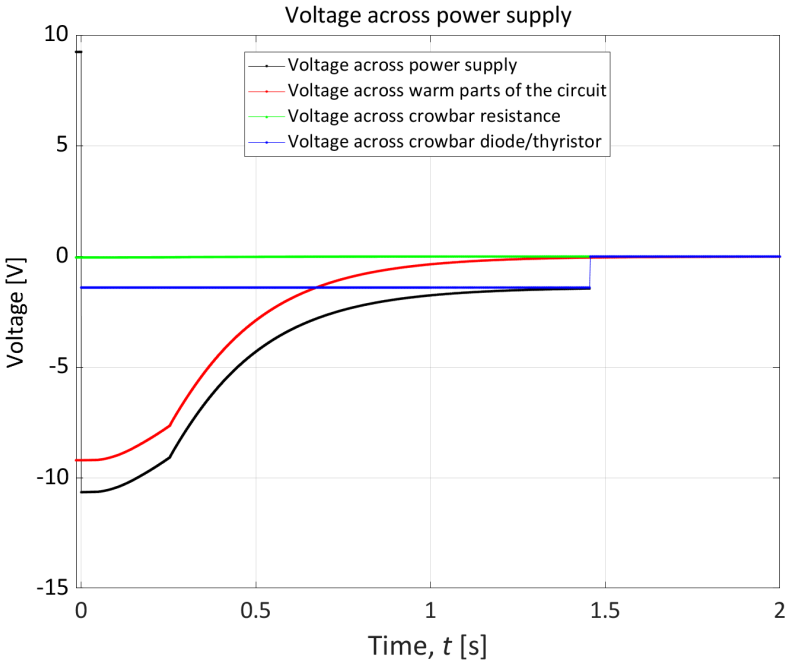
Temperature distribution at a selected time



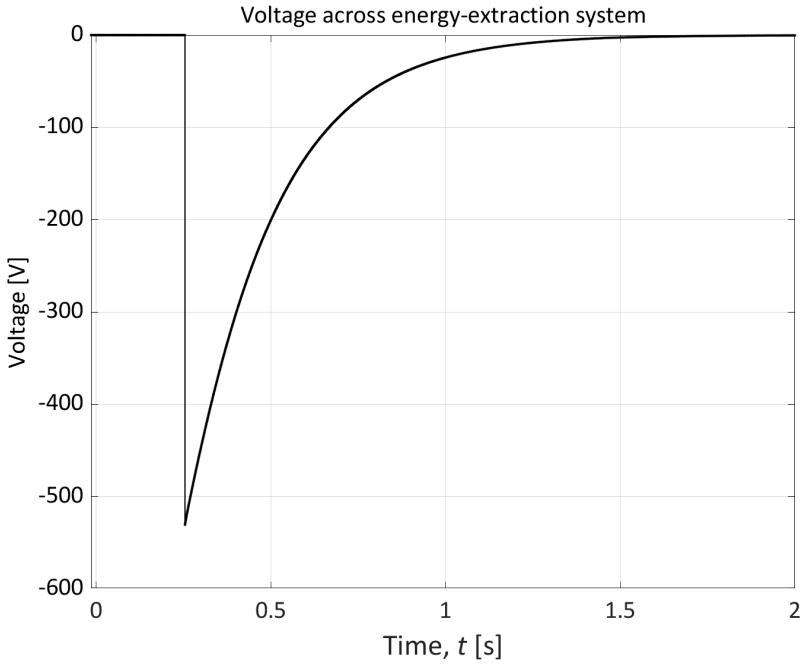
Peak inter-filament coupling loss per unit volume during the transient



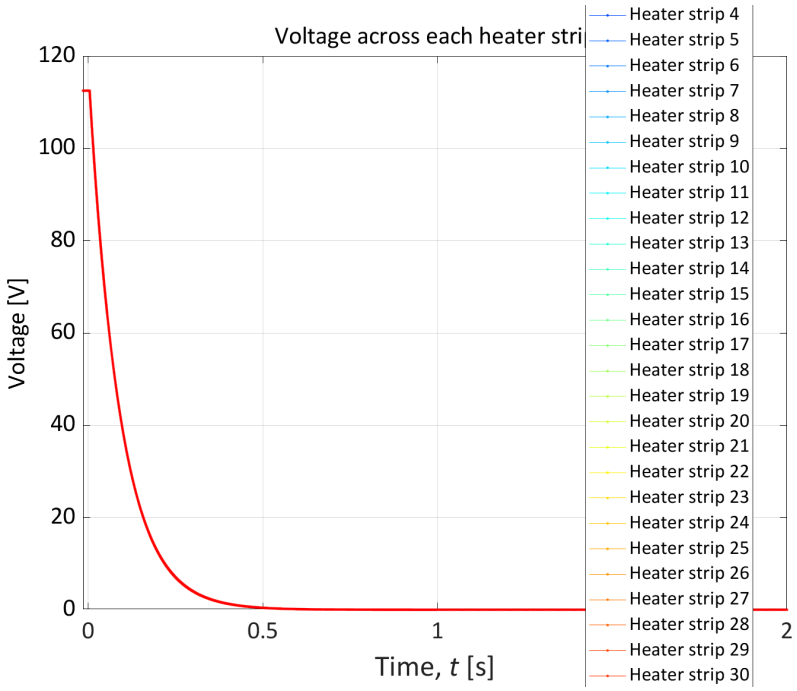
Voltage across power supply



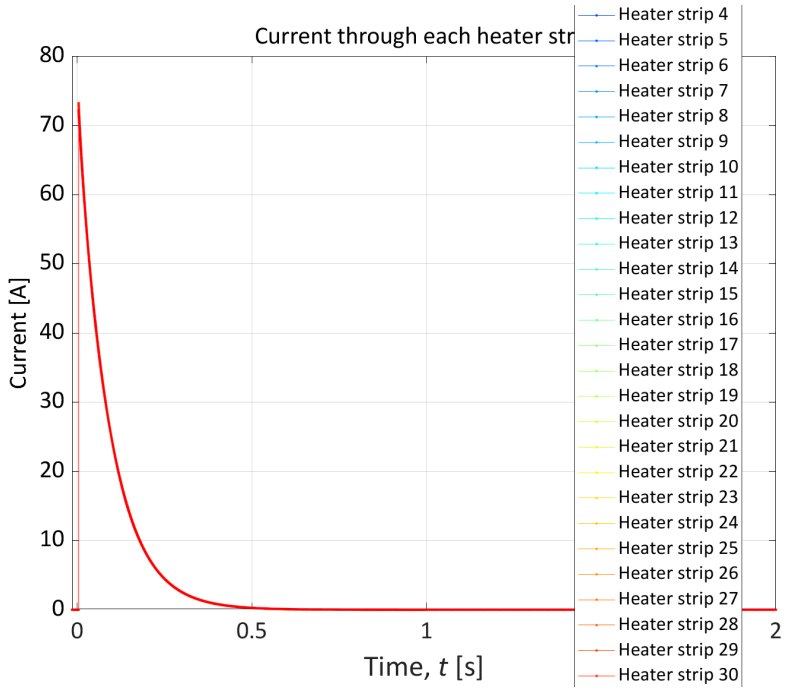
Voltage across energy-extraction system



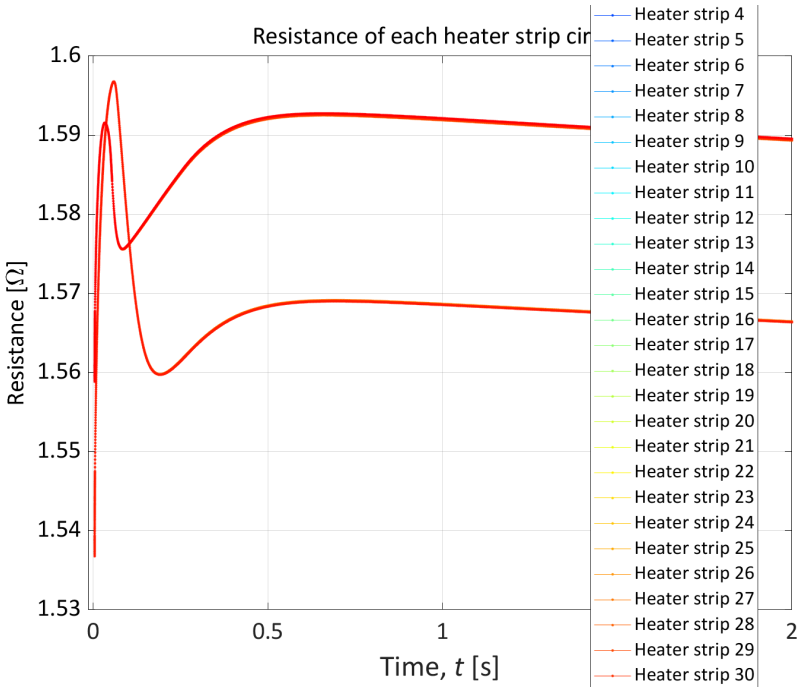
Voltage across each heater strip



Current through each heater strip



Resistance of each heater strip circuit



Report generated with STEAM-LEDET.

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