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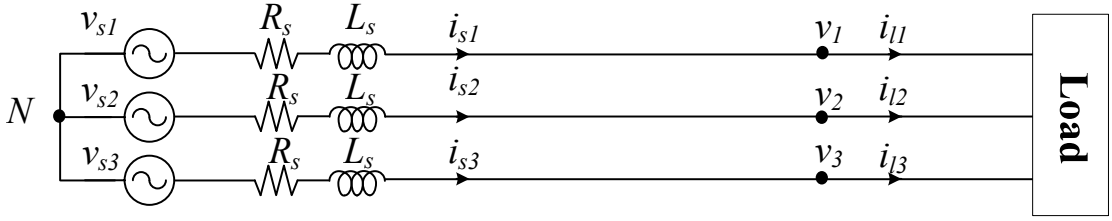
ELEC-E8424
Distributed Generation Technologies

Simulation Assignment

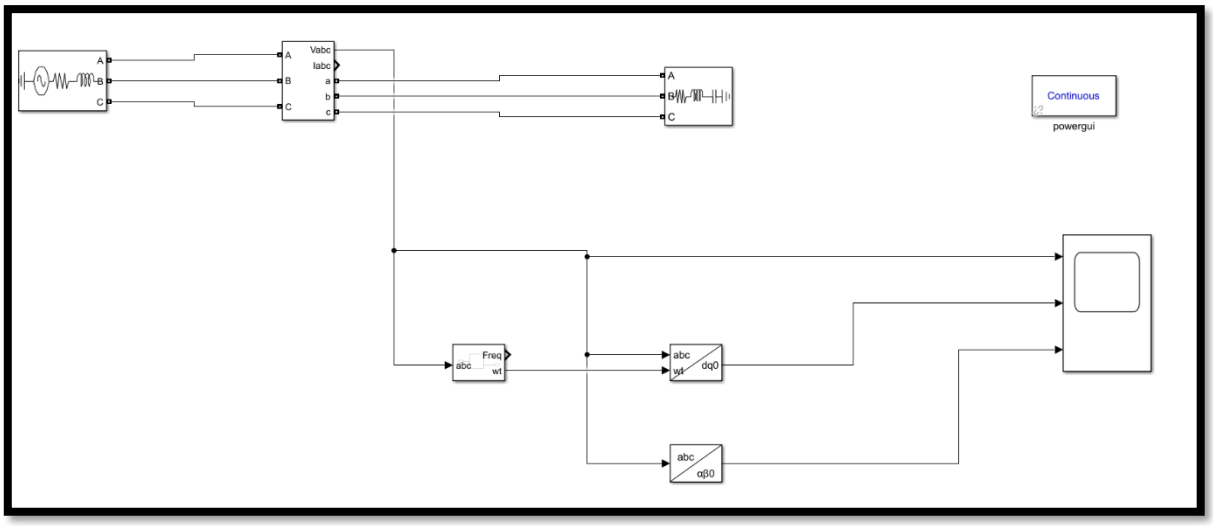
Q1: Draw V_α, V_β, V_d, and V_q from the load voltage (v_1, v_2, and v_3) in the following figure:



Note 1: The grid voltages and load are balanced.

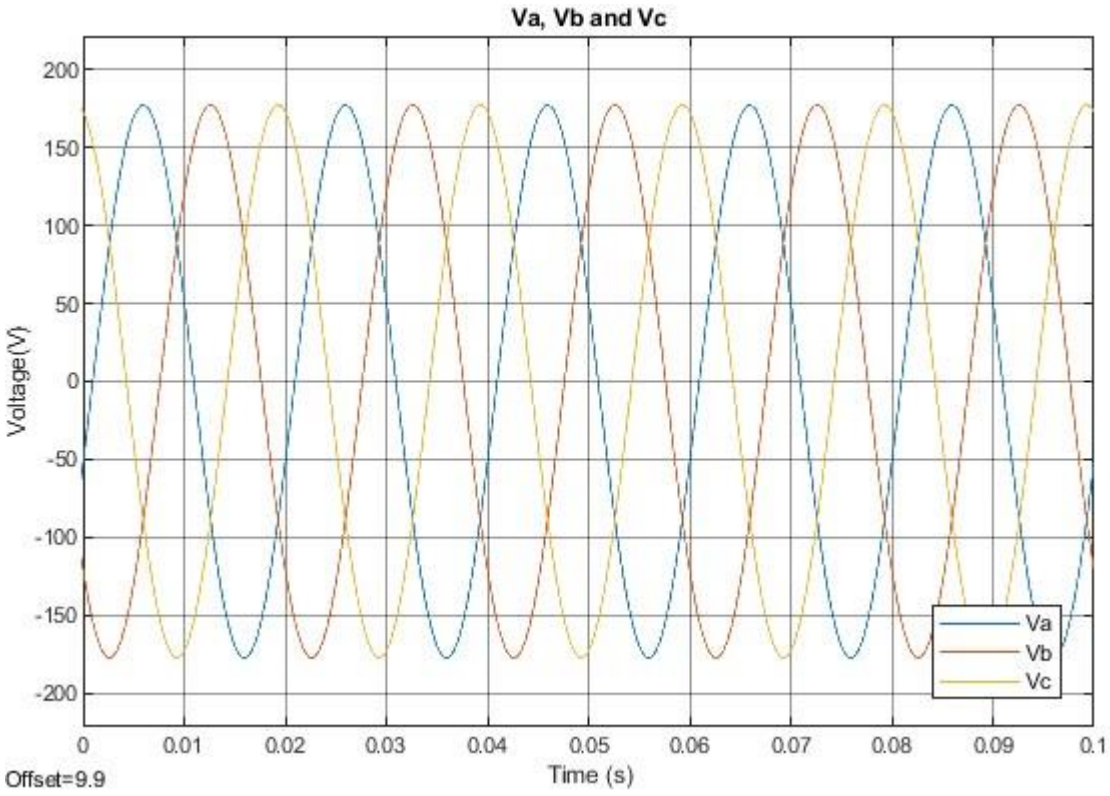
Note 2: Feel free to select any values for the voltage and parameters.

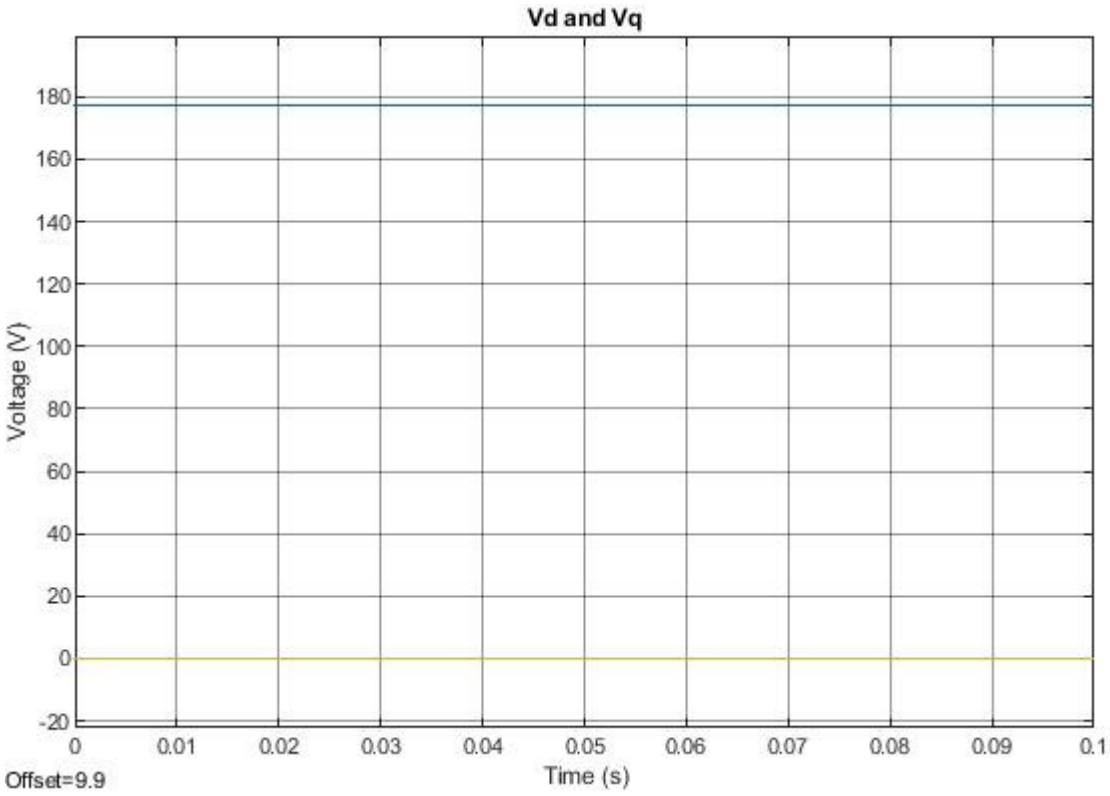
SIMULINK Figure:

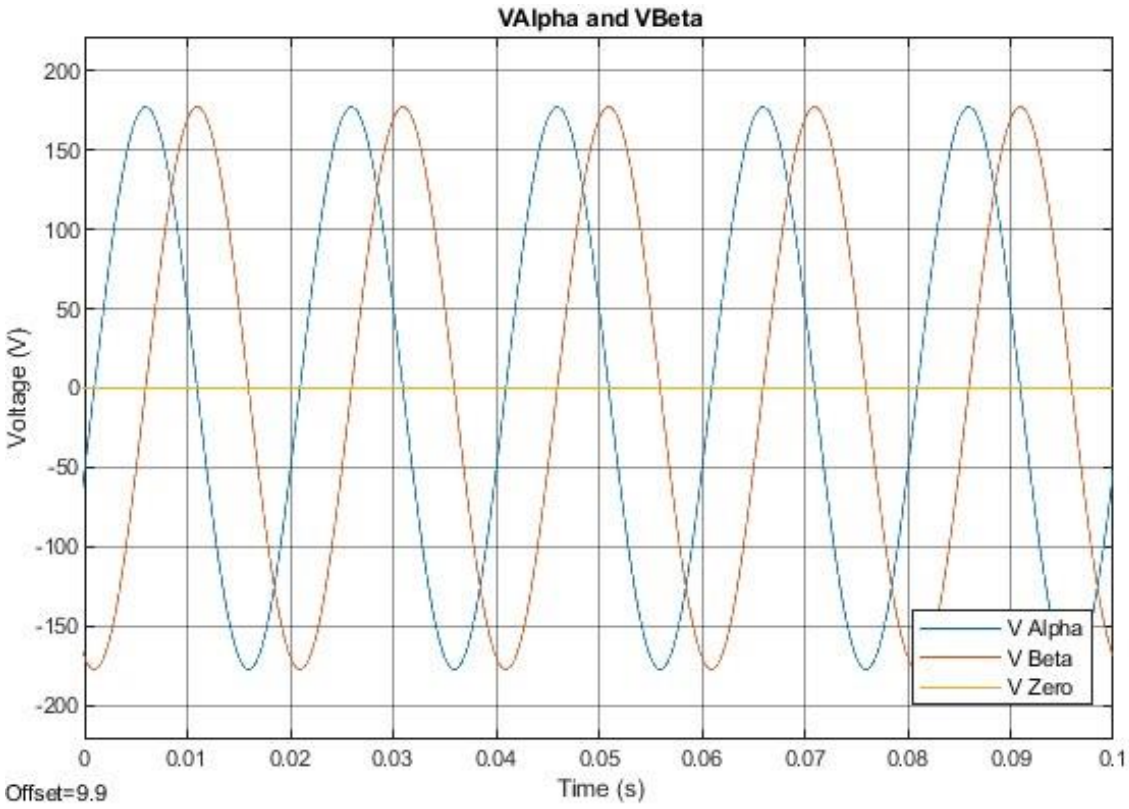


The model here represents a 3-Phase AC Voltage Source, 3-Phase Voltage Measurement Block, 3-Phase RLC Load, V_{abc} to V_{dq} Conversion Block and V_{abc} to $V_{\alpha\beta}$ Conversion Block. The results are then plotted using the Scope block which can be seen below. This figure is a representation of Park Transformation.

Voltage Waveforms:






VAlpha and VBeta
Voltage (V)
Time (s)
V Alpha
V Beta
V Zero
Offset=9.9