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1 Grids

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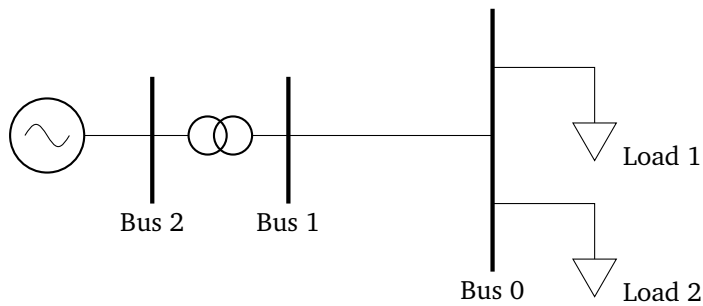


Figure 1.1: Single line network with two loads



Figure 1.2: SMIB model

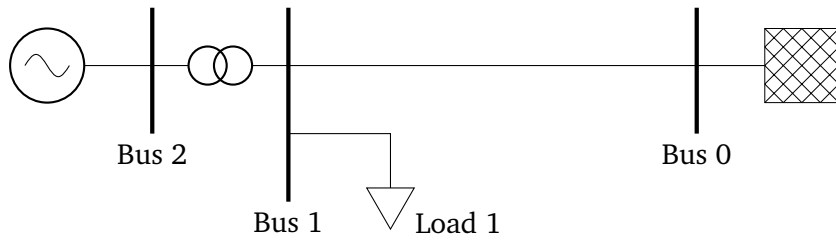


Figure 1.3: SMIB model with additional load

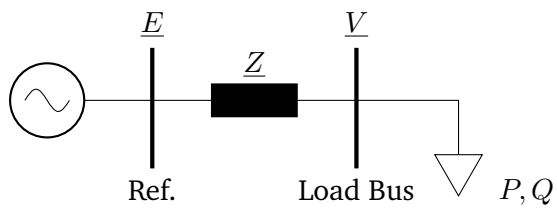


Figure 1.4: SMIB model with additional load

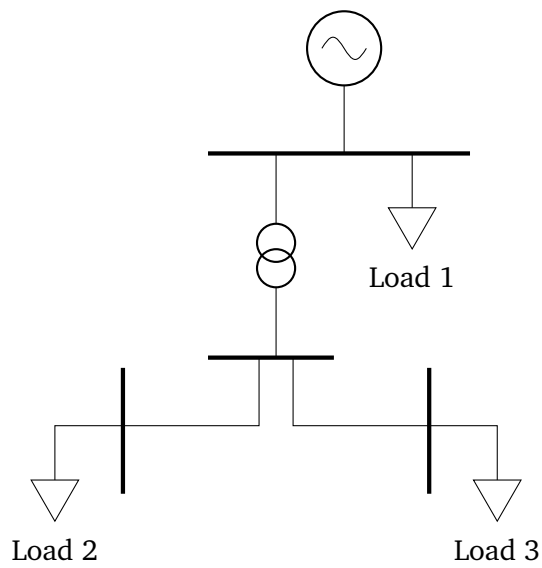


Figure 1.5: Random network with three loads on multiple voltage levels

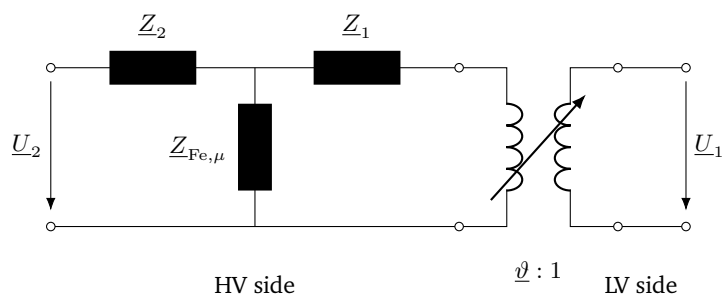


Figure 1.6: Complete transformer circuit

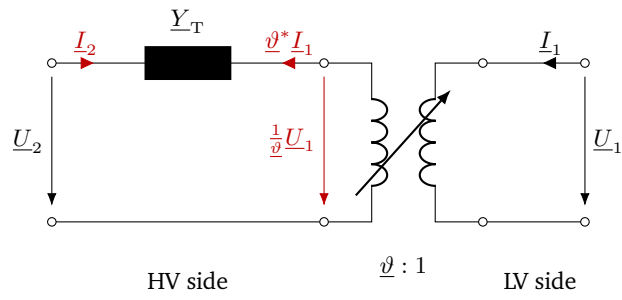


Figure 1.7: Reduced transformer circuit; based on Ilyas calculation

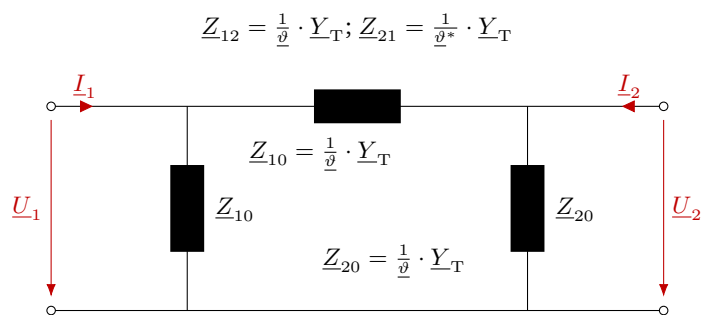


Figure 1.8: Transformer Pi circuit

2 Control Blocks

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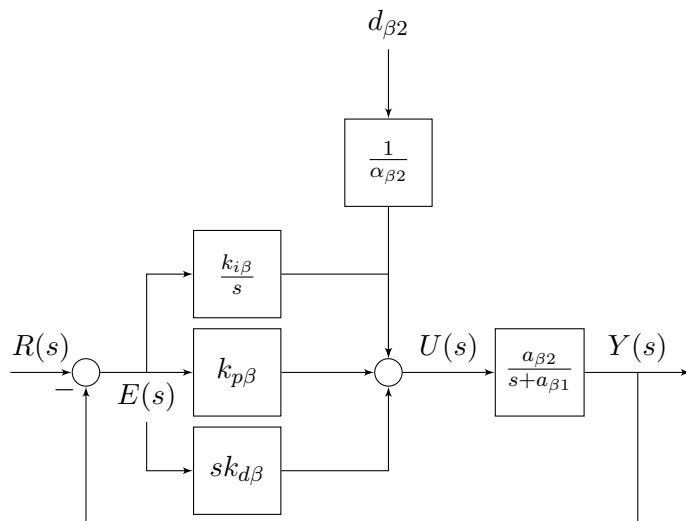


Figure 2.1: Example: Control block diagram

3 Others

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NoseCurve
+ results
+ ps_sim
- p_vector
- phi_vector
- loadmodel
+ run_calculation()
+ reset_sim_parameters()
+ plot_nose_curve()
+ get_max_loadings()

Figure 3.1: Class NoseCurve Diagram

NoseCurve	
+ results:	dict[DataFrame]
+ ps_sim:	diffpssi.PowerSystemSimulation
- p_vector:	list
- phi_vector:	list
- loadmodel:	callable
+ run_calculation(bus: list[str]):	dict[pd.DataFrame]
+ reset_sim_parameters():	None
+ plot_nose_curve(busses: list[str], size: tuple = (12, 6), title: bool = True, save_path: str = None):	None
+ get_max_loadings(busses: list[str]):	dict[dict[DataFrame]]

Figure 3.2: Class NoseCurve Diagram Complete

OLTC Transformer	
+ from_bus:	dict[DataFrame]
+ from_bus_id:	dict[DataFrame]
+ from_bus_name:	dict[DataFrame]
+ from_voltage:	dict[DataFrame]
+ measure_bus:	dict[DataFrame]
+ name:	diffpssi.PowerSystemSimulation
+ run_calculation(bus: list[str]):	dict[pd.DataFrame]

Figure 3.3: Class OLTC Transformer Diagram Complete

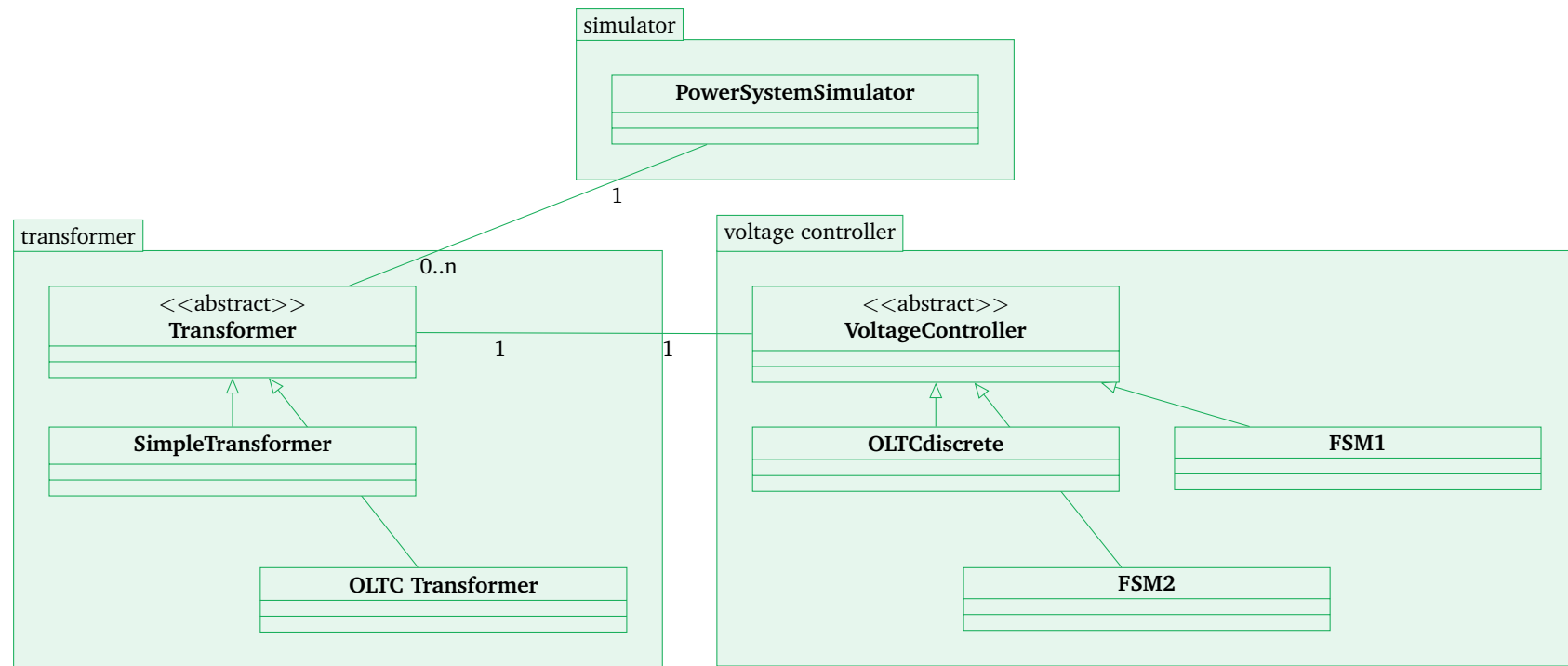


Figure 3.4: Software Structure idea