Complete 36-Equation Summary: 9th-Order System

Four Topologies × Nine States = 36 Differential Equations

State	Topology 11	Topology 10	Topology 01	Topology 00
diL1/dt	$V_{in}/L1$	$(V_{in}-vC3-vC0)/L1$	$V_{in}/L1$	$(V_{in}-vC3-vC0)/L1$
diL2/dt	$V_{in}/L2$	$V_{in}/L2$	$(V_{in}-vC1-vC0)/L2$	$(V_{in}-vC1-vC0)/L2$
diL3/dt	0	0	0	0
diL4/dt	0	0	0	0
diL5/dt	-vC1/L5	-vC1/L5	vC0/L5	vC0/L5
diL6/dt	-vC3/L6	vC0/L6	-vC3/L6	vC0/L6
dvC1/dt	(-iL5)/C1	(-iL5)/C1	iL2/C1	iL2/C1
dvC3/dt	(-iL6)/C3	iL1/C3	(-iL6)/C3	iL1/C3
dvC0/dt	-P/(C0·vC0)	(iL1+iL6-P/vC0)/C0	(iL2+iL5-P/vC0)/C0	(iL1+iL2+iL5+iL6-P/vC0)/C0

Pattern Recognition: L3, L4 always zero (inactive in positive half-cycle). L5, L6 switch between reverse charging (-vC/L) and forward transfer (vC0/L). Output equation complexity increases with number of active delivery paths.