

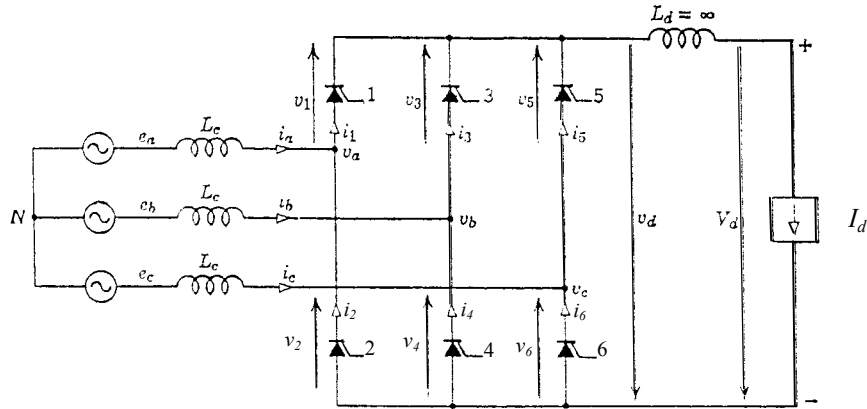


Fig. 1. Bridge converter—schematic circuit for analysis.

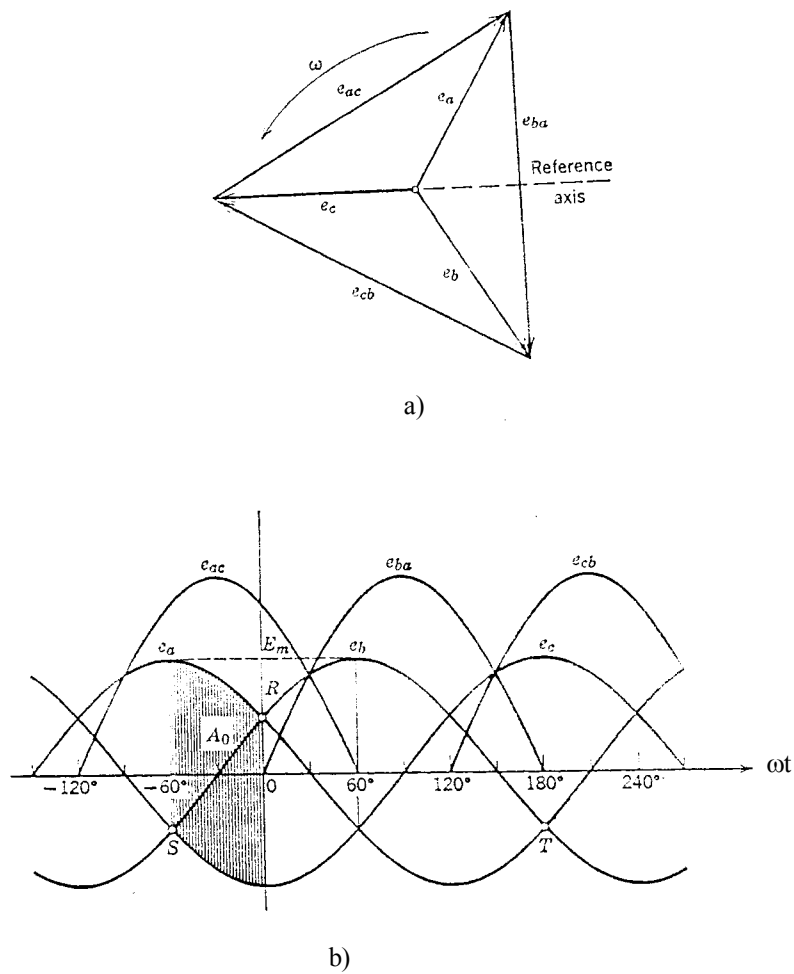


Fig. 2.

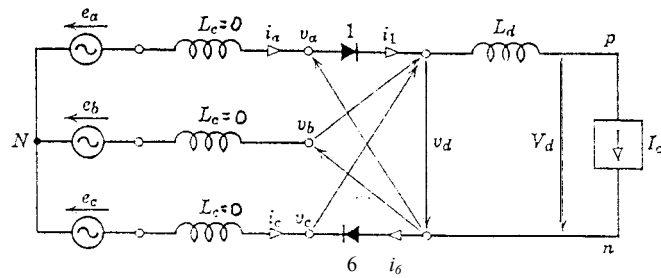


Fig. 3.

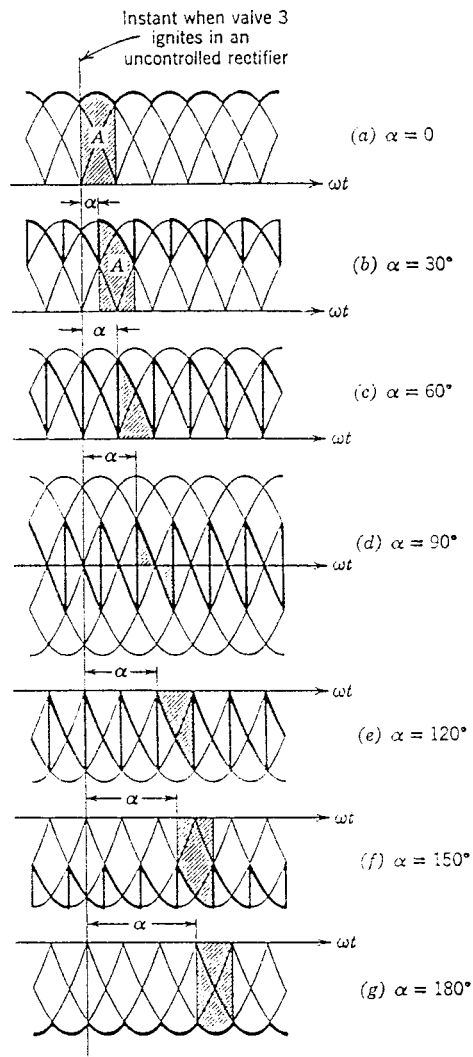


Fig. 4. Instantaneous direct voltage (shown by heavy line) of bridge converter with ignition delay angle α but no overlap.

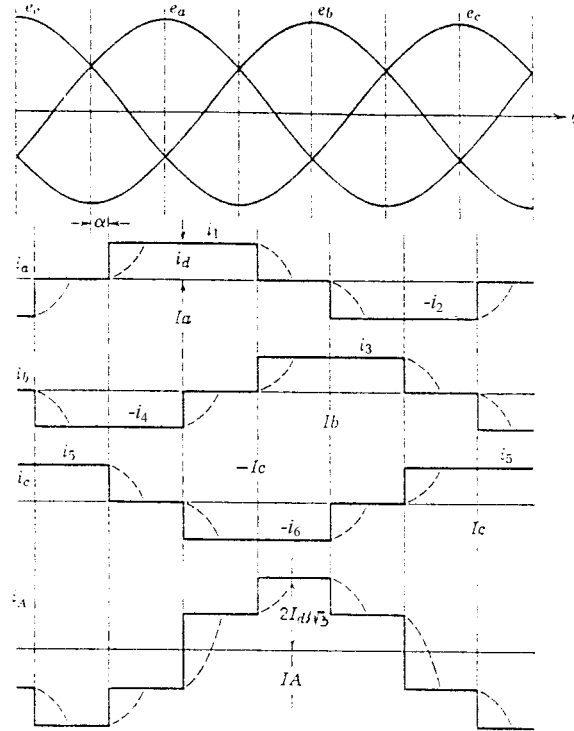


Fig. 5. Wave forms in a six-pulse bridge: line-to-neutral voltages e_a , e_b , e_c and line currents i_a , i_b , i_c with YY-connected transformer; also line current I_A with ΔY -connected transformer.

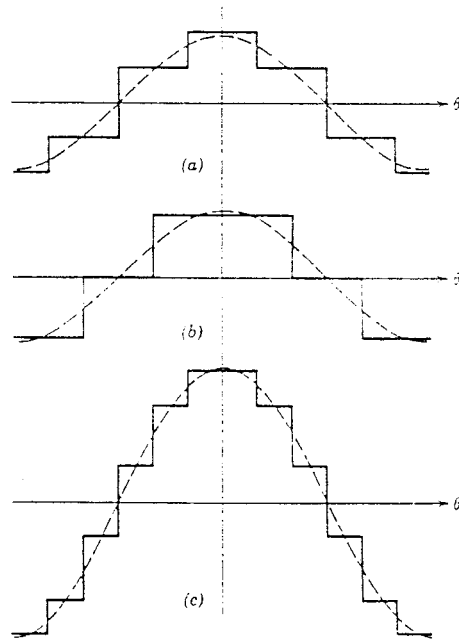


Fig. 6. Alternating line currents of a two-bridge 12-pulse converter with no overlap: (a) current of six-pulse bridge with Y Δ -connected transformer; (b) current of six-pulse bridge with YY-connected transformer; (c) total current.

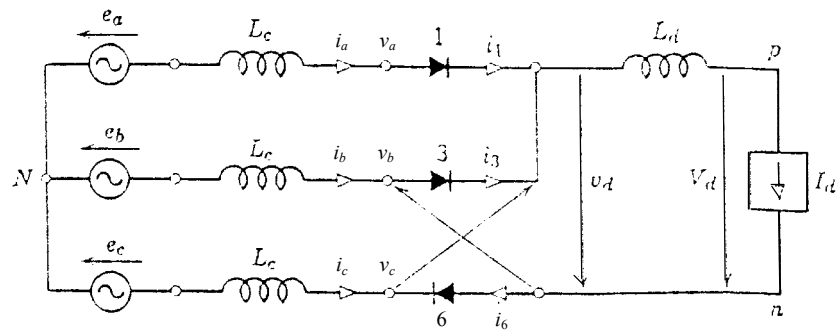


Fig. 7

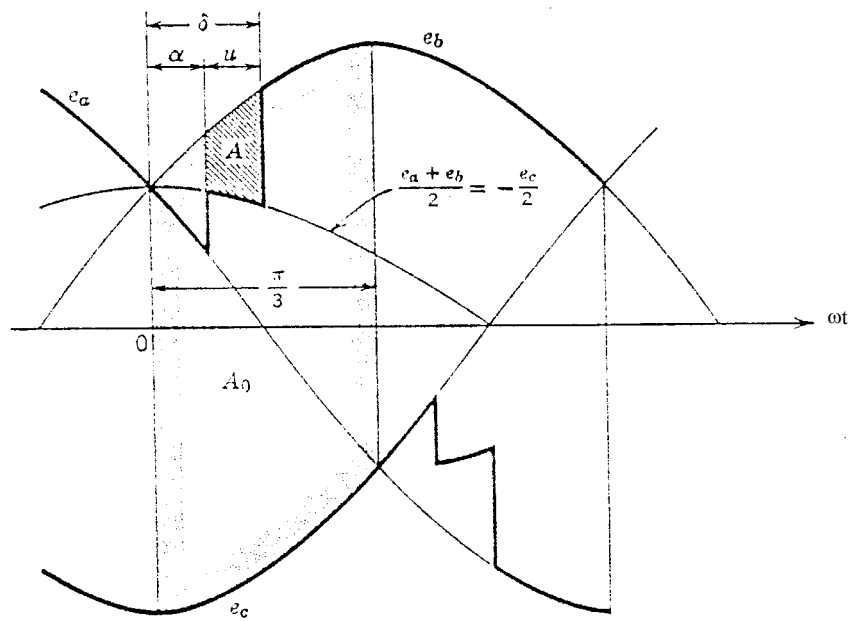


Fig. 8

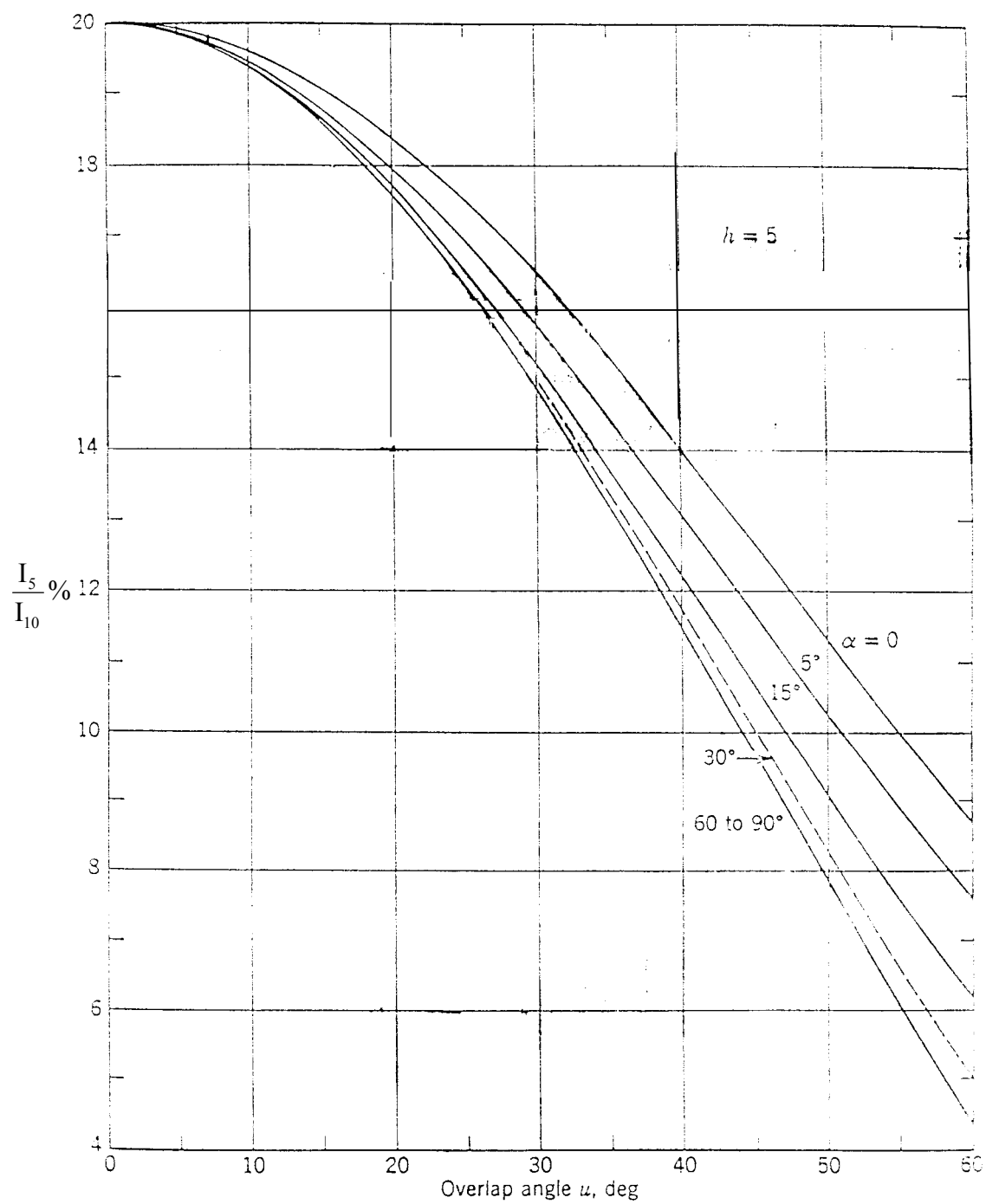


Fig. 9. Fifth harmonic current of a six-pulse converter as a function of converter angles.

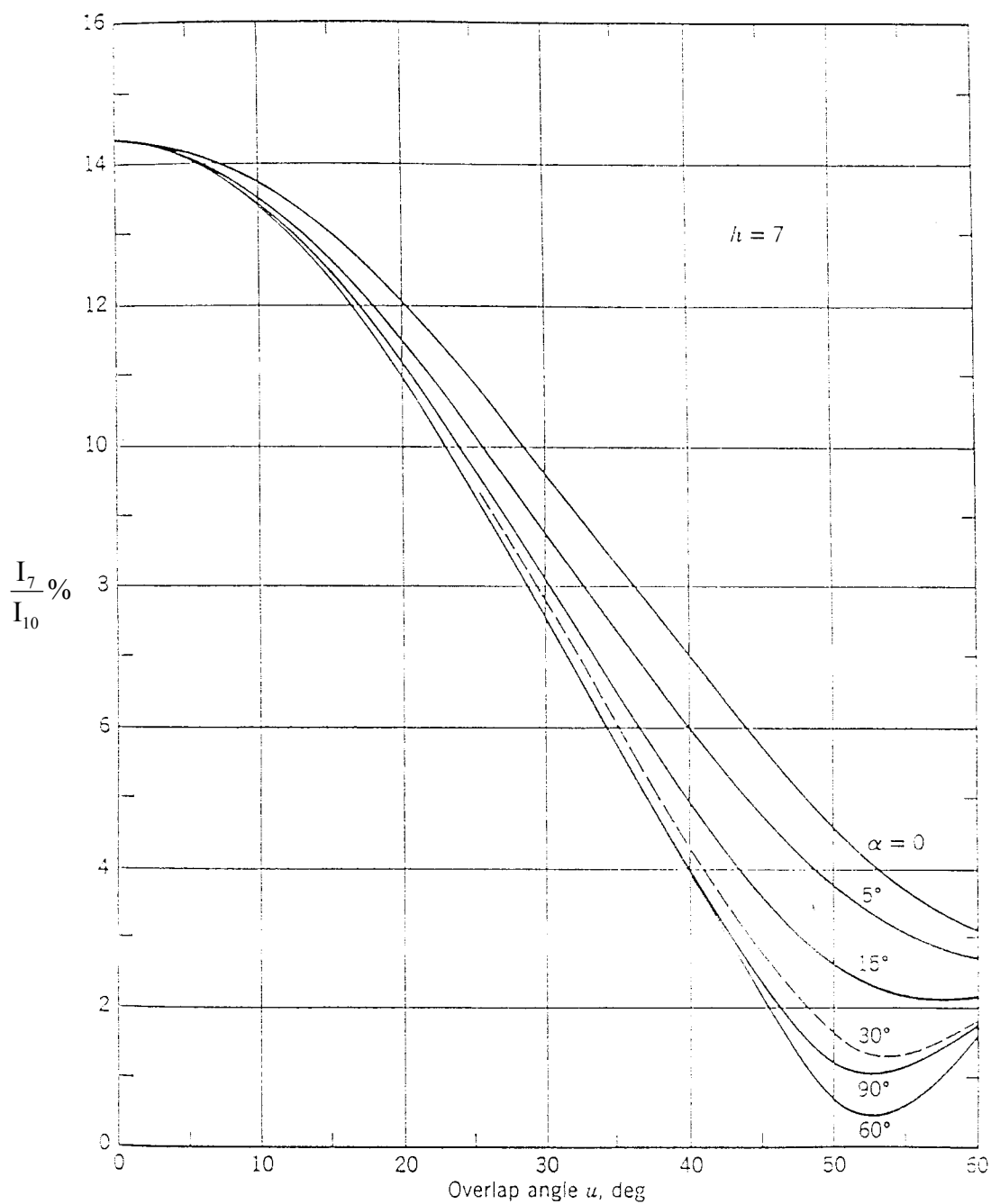


Fig. 9. Seventh harmonic current of a six-pulse converter.

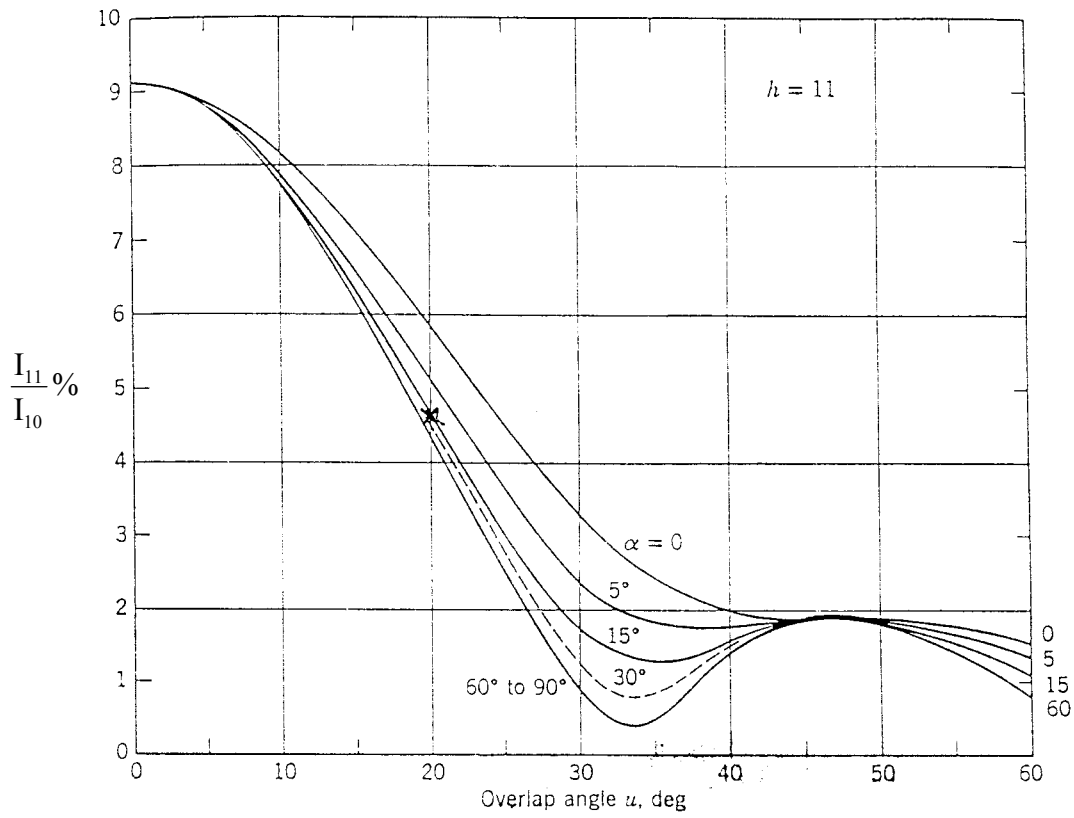


Fig. 9. Eleventh harmonic current of a 6- or 12-pulse converter.

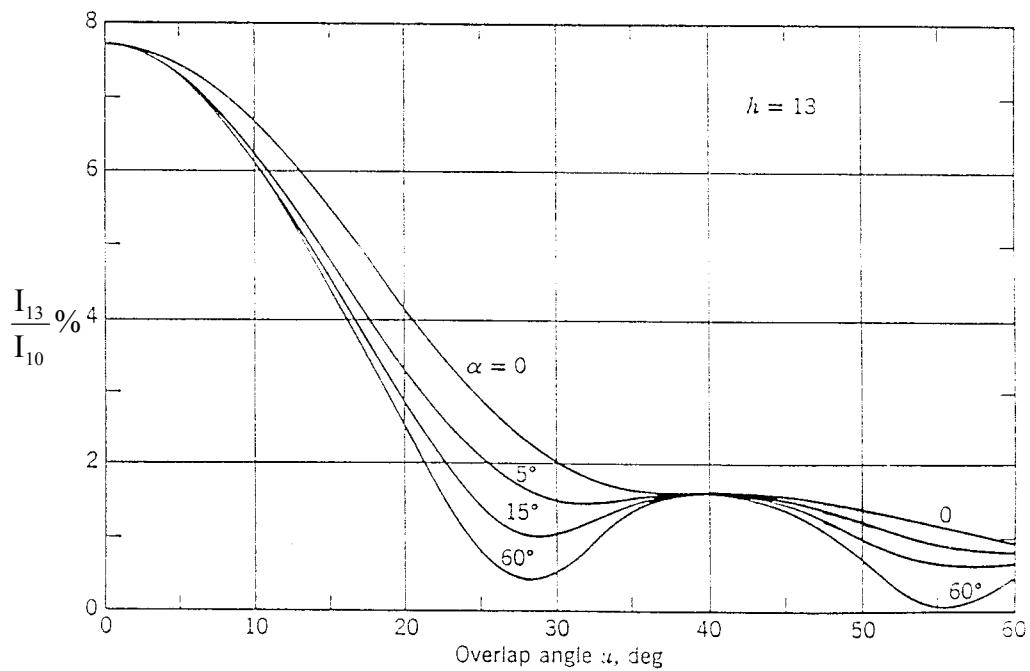


Fig. 9. Thirteenth harmonic current of a 6- or 12-pulse converter.

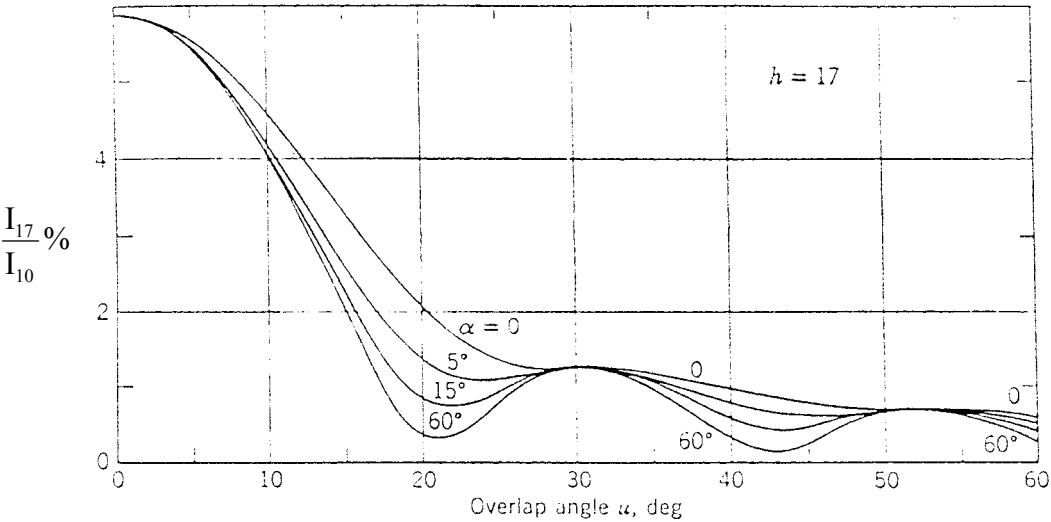


Fig. 9. Seventeenth harmonic current of a six-pulse converter.

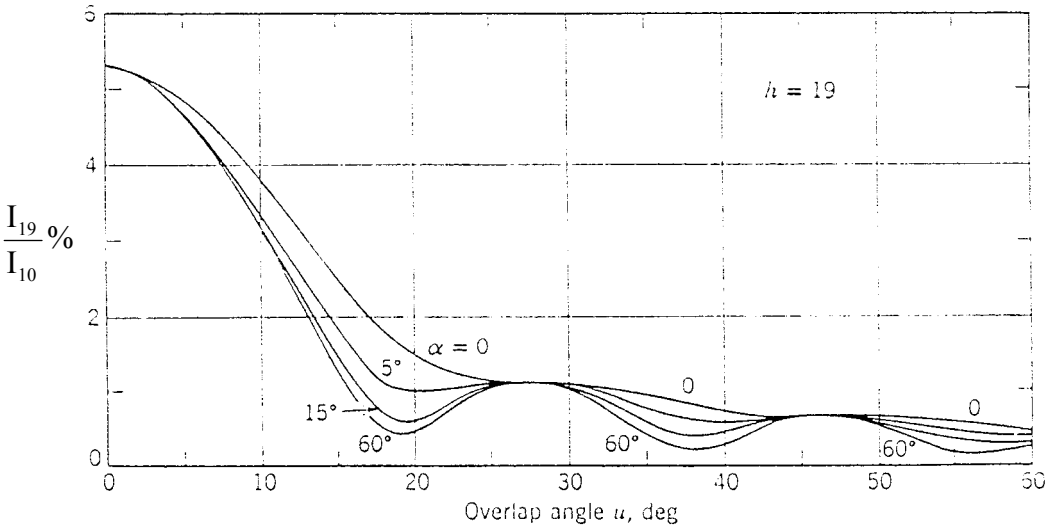


Fig. 9. Nineteenth harmonic current of a six-pulse converter.

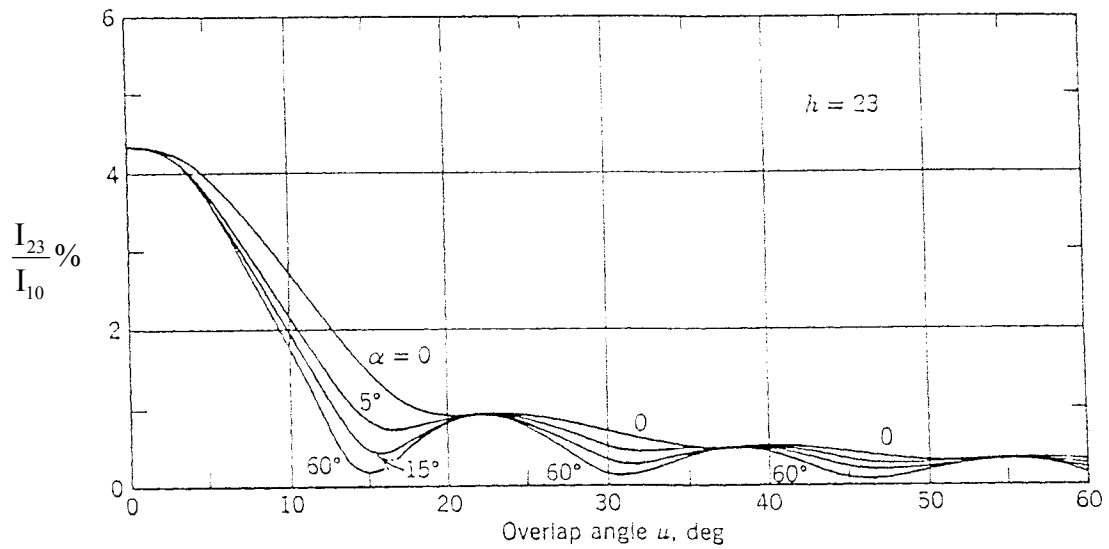


Fig. 9. Twenty-third harmonic current of a 6- or 12-pulse converter.

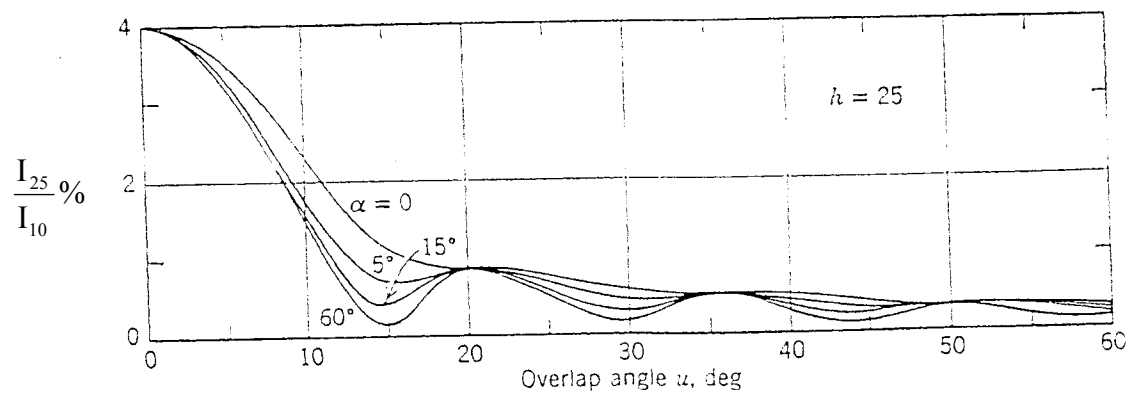


Fig. 9. Twenty-fifth harmonic current of a 6- or 12-pulse converter.