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*Currently a great deal of scientific proceedings and articles are dedicated to consideration and description of operating principles of three-level AVI. In lesser degree problems of three or four levels AVI are considered, as for AVI from n > 6 are mentioned in rare papers with a short explanation of processes running in the scheme.*  
*The authors have proposed a multilevel AVI method as universal system with n ≥ 3 with pulse-width modulation (PWM). The represented spectral model of n-level voltage inverter enables to consider the principles of operation of the scheme and assess the spectral composition of its currents and voltages at different PWM control methods and relatively small span time to calculate the model.*  
**Key words:** multilevel voltage inverter, spectral model, harmonic composition, pulse-width modulation, modeling, sweep waveform.

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