
How does a buck converter generate sinusoidal waveforms?

Xin Zan¹

¹University of Maryland, USA

Email: xinzan@umd.edu

Publication Date: 07 September 2026

This PDF provides the scholarly description and references accompanying the educational video published under DOI: <https://doi.org/10.17024/pelstube.2026.008>.

Abstract:

In this video, the conventional dc-dc operation from a buck converter will be reviewed first. Later, two methods, SPWM and resonance, will be introduced to generate sinusoidal waveforms from a buck converter through LC filter design, switching frequency selection, and/or control strategy, covering some fundamental concepts and necessary tools in the field of power electronics.

Keywords:

DC-DC power conversion, Resonant power conversion, Switched-mode power converters
