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In-Depth Analysis of Modern Optimization Strategies for Controllers

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Abstract: *Almost every day, new commercial power electronic controllers are introduced to the market with the goal of enhancing the efficiency and performance of electronic circuits and systems. A simple and sophisticated hysteretic controller governs the fundamental buck, boost, and buck-boost converters in DC–DC switching-mode converters under somewhat diverse topologies. The input current shaping for power factor correction places restrictions on AC-DC converters. However, a number of excellent commercial controllers are proved to accomplish almost flawless power factor adjustment for boost and flyback converters. This study presents a thorough analysis of the several advanced optimization methods used to power electronic controllers.*

Keywords: Performance Improvement, Algorithm Efficiency, Robust Control.