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With the growing use of inverters in distributed generation, the problem of injected harmonics becomes critical. These harmonics require the connection of low pass filters between the inverter and the network. This paper presents a design method for the output LC filter in grid coupled applications in distributed generation systems. The design is according to the harmonics standards that determine the level of current harmonics injected into the grid network.

Analytical expressions for the maximum inductor ripple current are derived. The filter capacitor design depends on the allowable level of switching components injected into the grid. Different passive filter damping techniques to suppress resonance affects are investigated and evaluated. Simulated results are included to verify the derived expressions.



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