Etude Comparative des Techniques de Filtragedes Harmoniques de Courant

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Soutenue en: 2010

Abstract : The problem of harmonic pollution in distribution electrical networks is becoming more and more worryingwith the increasing use of nonlinear loads, several solutions were proposed to cure the problems generated by theharmonics, the power active filter is one of the most effective solutions vis-a-vis this problem. In our memory,we will begin with stating, as a general information, the basic definitions, as well as the study of the causes forpurpose of harmonic pollution. Then, one presented the various means of mitigation against harmonic pollution,passive filter; active filter and hybrid filter... etc. After, we are interested much more in shunt filter active, we arepresented the principle of operation of this last, the various algorithms of identification of the harmonics ofreferences, tow technique the control of the inverter of tension MLI and hysteresis, the regulation of the tensioncontinuous, grace the Matlab-simulink software we are showed the effectiveness of the shunt active filter tocompensation of harmonic with balanced and unbalanced rate. But undoubtedly it has a disadvantage, To curethe major disadvantage of the shunt active filter, we presented as first solution three methods of shunt activefilter by selective action ' the selectivity of the desired harmonics is done containing the method , , ,these method are study and compared with them. As second solution, we presented a hybrid filter type 'association series of a passive filter and a shunt filter active filter' the results of simulation of each solution showwell the effectiveness of these techniques of solution.

Keywords : harmonic, non-linear charge, active filter, passive filter, hybrid filter, MLI, hysteresis, selective active filter, FMV, dq, pq