A TUNING METHOD OF PASSIVE FILTER BASED ON VARIABLE REACTORS

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ABSTRACT—The principles of the traditional passive filter for suppressing harmonics are qualitatively analyzed in this study. The auto-tuning principles based on TCR are also analyzed. According to the deficiencies of these filters, a passive filter based on variable reactors is presented and the tuning method is investigated principally. This filter utilizes the anti-parallel thyristor controlled reactor as a variable reactor. The secondary equivalent inductance of the variable reactor is adjusted by the triggering angle of the thyristor. Then the equivalent inductance of the variable reactor in the filter branch is indirectly changed, to make the filter resonant after the capacitance is varied, so as to achieve the auto-tuning of this passive filter. Based on the auto-tuning principles of the filter, the tuning parameters of the filter are deduced emphatically. Finally, the tuning steps are summarized.