



Fig.7. Harmonic spectrum and THD of the current with a fuzzy controller.

4 Conclusion

In this paper we presented a new control strategy for a PWM rectifier constant switching frequency. It concerns the use of the direct power control with space vector modulation (DPC-SVM) principle via a fuzzy control system on the DC side; it reduces the number of sensor used, and to offer a fast power response following a disturbance. In order to obtain a stable exchange of the active power flow between the converter and the electrical network, the dc voltage is controlled using a fuzzy regulator. Simulation results showed that the DPC-SVM technique combined to a dc voltage fuzzy control improves the system performances.

These improvements concern the performances of the system response on the DC side (overshoot and response time), as well as the power-factor and the THD of the line current.

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