

## **Modelling and simulation of a split-phase induction motor fed by single-phase AC-AC converter**

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### **SUMMARY**

Direct AC-AC converters have a number of advantages compared to dc link converters used in motor control applications. A single-phase AC-AC converter can be easily realised using power IGBTs. This paper has provided a model for the steady-state and transient behaviour of a split-phase induction motor fed by a direct AC-AC converter via use of PSPICE software as a novel approach to the performance evaluation of such systems.

The advantage of this method over the others is that it does not involve the utilisation of specialised programs and mathematical difficulties such as the solution of stiff differential equation. Open-loop speed control of the split-phase induction motor in constant torque and power regions has been performed using PSPICE. The simulation results demonstrating the transient and steady-state behaviour of such a system are presented.

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