

ABSTRACT

METHOD AND APPARATUS FOR ESTIMATING ROTOR ANGLE AND ROTOR SPEED OF SYNCHRONOUS RELUCTANCE MOTOR AT START-UP

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A method of estimating a rotor angle of a synchronous reluctance motor, where the motor comprises a stator and a rotor. First, a stator flux and a stator current are determined. Two orthogonal stator flux components in a stator reference frame are calculated from the stator flux. Two orthogonal stator current components in the stator reference frame are calculated from the stator current. A rotor orientation vector is then calculated using a known rotor direct or quadrature axis inductance component, the stator flux components, and the stator current components. The rotor orientation is estimated on the basis of the rotor orientation vector.

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(Figure 3)

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