

AC INDUCTION MACHINE SPEED ESTIMATION USING ELECTRICAL QUANTITIES HARMONIC ANALYSIS

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Abstract: *Control of drives based on AC induction motors is a quite complex task. Provided the vector control algorithm is used we need to know not only the rotor speed but also the position of the magnetic flux inside the motor during the control process. In most applications the flux sensors are omitted and the magnetic flux space vector position has to be calculated. But there are also applications in which even speed sensors should be omitted. In such a situation, we have to solve the task of state reconstruction only from voltage and currents measurements. Speed estimation methods based on the rotor slot harmonics analysis are popular because they do not depend on the machine electrical parameters knowledge. This paper deals with a problem of small induction machine speed estimation.*

Key words: *Induction machine, sensorless control, rotor slot harmonics*



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