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Abstract
The study on the permanent magnet synchronous motor (PMSM) and its drive is considered in the dissertation. The sinusoidal pulse-width modulation (SPWM) and voltage space vector PWM (SVPWM) are both applied to the voltage source inverter (VSI), respectively. The branch currents and node voltages in the VSI are investigated and obtained by simulation using Matlab Simulink and switching functions and measured from circuit controlled by TI TMS320F240 DSP chip. The Q12 format and look-up table are adopted to reduce the ROM space.

The application to visual servo of the PMSM and drive is shown. The human-machine interface and monitoring software are programmed by Visual C++. The modified motion JPEG is used to compress the image data and the real-time tracking is implemented by PMSM and drive.
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