

## 2.6 Pulse Width Modulus (PWM) Control System

The rapid development of digital computer type controls has spawned a dramatic escalation in the development of PWM applications. This example illustrates the use of HyPneu in the analysis of real-world PWM controlled systems. The schematic in Fig. 2.6a shows a cylinder system controlled by a bang-bang valve (SH6220). The actual valve response dynamics are represented by the transfer function (TF1). As can be seen in the curve, HyPneu can simulate any duty cycle and any frequency. The experimental results are given to demonstrate the close agreement between the simulation using HyPneu and the laboratory data using exactly the same system.

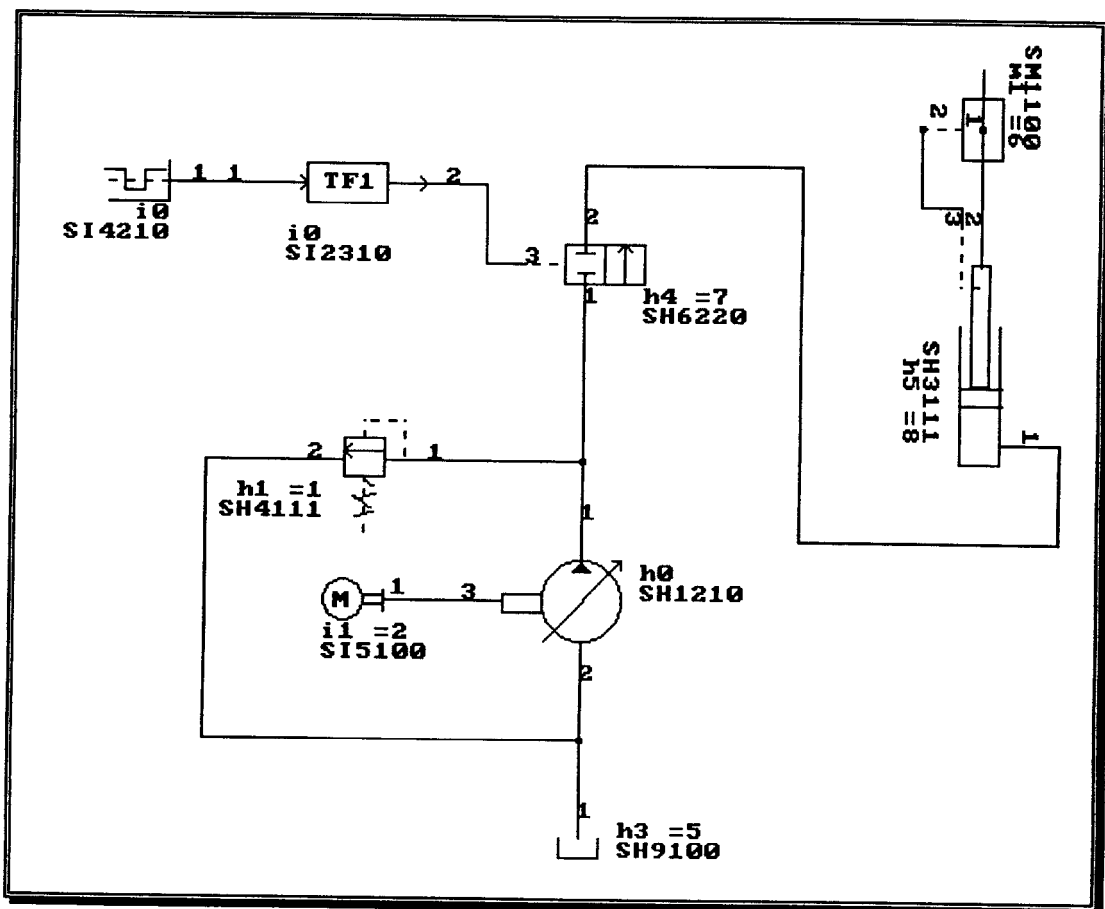


Figure 2.6a. PWM Control System Schematic.

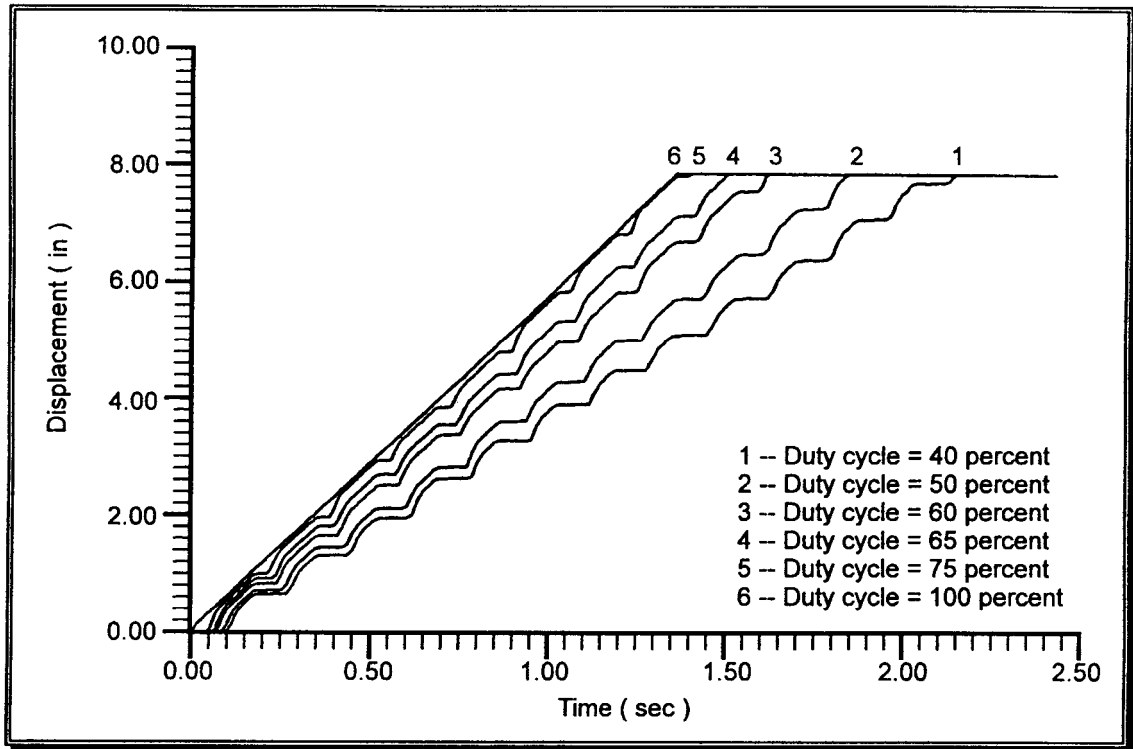


Figure 2.6b. PWM Controlled Hydraulic System Analysis.

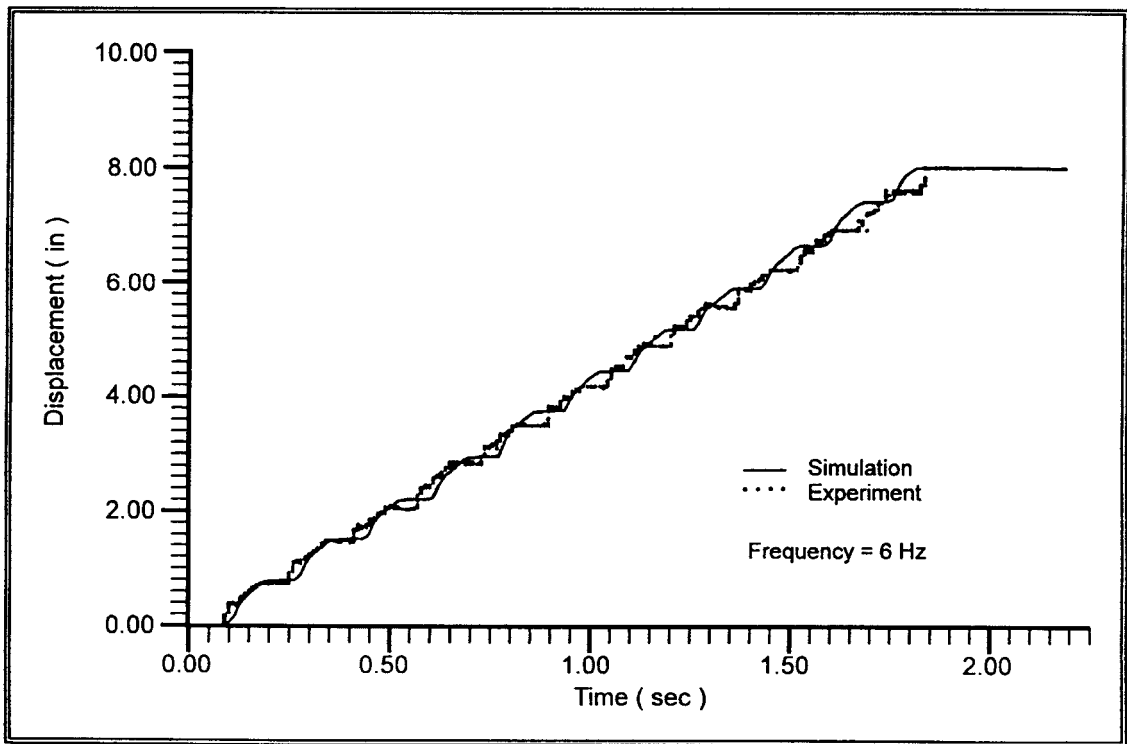


Figure 2.6c. PWM Controlled Hydraulic System Analysis.