

The aim of this study is to carry out performance modeling of an experimental refrigeration system driven by variable speed compressor using Data Mining techniques with small data sets. In order to vary the capacity of the refrigeration systems, one of the best methods is controlling the rotational speed of the compressor motor with a frequency inverter. For this aim, an experimental refrigeration system is setup with a frequency inverter for controlling the speed of compressor electric motor. The experiments are made for 35 Hz to 50 Hz electric motor frequencies. Data mining technique is applied to determine the system performance parameters using actual data obtained from the measurements. From the results, it is observed that data mining procedure is suitable for forecasting the system characteristics for different compressor frequencies and cooling loads instead of making several experiments.