

## Reliability Analysis of Heat Exchanger Cycle Using Non-Parametric Method

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**Abstract :** Non-parametric reliability technique is useful for assessment of reliability of systems for which failure rates are not available. This is useful when detection of malfunctioning of any component is the key purpose during ongoing operation of the system. The main purpose of the Heat Exchanger Cycle discussed in this paper is to provide hot water at a constant temperature for longer periods of time. In such a cycle, certain components play a crucial role and this paper presents an effective way to predict the malfunctioning of the components by determination of system reliability. The method discussed in the paper is feasible and this is clarified with the help of various test cases.

**Keywords :** heat exchanger cycle, k-statistics, PID controller, system reliability

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