

## Reliability-Based Life-Cycle Cost Model for Engineering Systems

**Authors :** Reza Lotfalian, Sudarshan Martins, Peter Radziszewski

**Abstract :** The effect of reliability on life-cycle cost, including initial and maintenance cost of a system is studied. The failure probability of a component is used to calculate the average maintenance cost during the operation cycle of the component. The standard deviation of the life-cycle cost is also calculated as an error measure for the average life-cycle cost. As a numerical example, the model is used to study the average life cycle cost of an electric motor.

**Keywords :** initial cost, life-cycle cost, maintenance cost, reliability

**Conference Title :** ICHEV 2014 : International Conference on Hybrid and Electric Vehicles

**Conference Location :** Paris, France

**Conference Dates :** July 21-22, 2014