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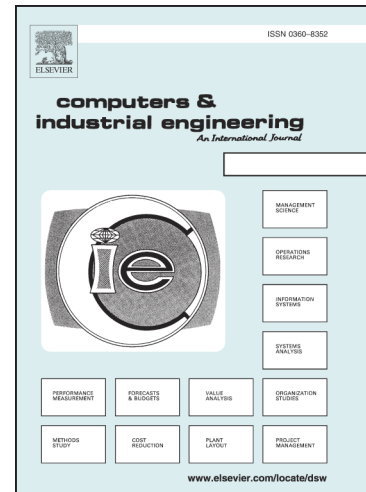
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Condition-based Maintenance under Performance-based Contracting

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Abstract

In this paper, a new cost optimization model has been developed and demonstrated to determine cost-effective maintenance plans specifically for performance-based contracting. Maintenance, repair and overhaul (MRO) has become more critical in many industries as the global economy continues to be more service-based. Traditionally, the MRO services are performed under material-based contracts. A new support contracting approach, referred to as performance-based contracts, has emerged and received much attention in recent years. In this paper, we examine the impact of the performance-based contracts on maintenance decisions for repairable systems. We consider a stochastic degradation process that has substantial unit-specific heterogeneity. Periodic inspection/repair is implemented during field operations. Rewards for maintenance service providers are directly dependent on the average availability, and the goal of the maintenance providers is to maximize profit rates. Two benchmark models are developed for

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