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amidiq@xanum.uam.mx
Universidad Autónoma Metropolitana Unidad
Iztapalapa
México

Soriano, A.

Análisis de fallos histórico-predictivos a través de su entorno: una aproximación con probit/logit y control estocástico discreto

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Universidad Autónoma Metropolitana Unidad Iztapalapa
Distrito Federal, México

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Abstract

The principal goal of this work is to obtain one failure probability estimation from an indirectly manner, i.e., from a set of variables or profile system we can establish one environment of the pipeline distribution system -or module-. Specially, we are interesting in the prime of life more than in first years of the system. The secondary objective in section 2 is to make a reliability analysis, in this procedure we are building one stochastic approach based on one set of parameters which are computed from historical data in order to obtain a forecast analysis. Finally, we construct an on-line method in section 9. In this paper we obtain the optimal policy related to the optimal reliability index in the prime of the life. In other words, we obtain value function and its reliability index of the system. In order to emphasize this parameters estimate problem by means of historical data we construct one discrete scheme. In this way one discrete procedure enables us to obtain the value of investment together with reliability indexes (the frequency of failure, the operation expected time and the not availability index). This kind of concepts leads us to believe that the operation index and, consequently, we have anticipated and detected every eventuality and critical behavior states of the system. The main goal is to call the machine operator in order to return to the normal and adequate operation state. It has main advantage of being near to the practice and this procedure can generate a discrete technique in order to construct, in an explicit manner, one cost function. Present method takes in to account natural association between financial and technical aspects in order to make a decision related to the maintenance of the complete system or some components when it is suffering from a serious failure.

Keywords

failure analysis, optimal stochastic control, reliability, historical-forecast analysis, probit models.

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