



ARA and ARI Imperfect Repair Models: a proposed method for model selection

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In this paper, the classes of imperfect repair models Arithmetic Reduction of Age (ARA) and Arithmetic Reduction of Intensity (ARI) are revisited and a graphical method for model selection is proposed. With this method it is possible to identify which class of models ARA or ARI and which order of memory m provides the best fit for a given history of system failures. The method is applied to a real data set of failures in trucks used by a Brazilian mining company and reliability predictors are obtained based on the best fitted model.

Keywords: imperfect repair; virtual age; goodness-of-fit; arithmetic reduction of age models