Prediction in ordered statistics and its applications

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The importance of product reliability has become a crucial parameter to the manufacturers (of computers, automobiles, and electronic items, for example) for the success of their ongoing business. A complete information on the product reliability can help the manufacturers to design attractive warranty policies for the consumers. A cost-effective warranty design needs information on the product failure time distribution which is commonly determined through life-testing experimental data. These data are always ordered data and often partially observed. Therefore, there is a need for prediction of the unobserved part of the data. A powerful tool for prediction methodology is the linear estimate. The results on the prediction methods are not fully developed (except for a few simple life-testing experiments) in the literature for the complex life-testing experiments. The principal aim of this talk is to describe the theoretical results for the prediction in such complex cases and to show its applicability by analyzing failure data obtained through life-testing experiments conducted in industries.