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International Research Group on Wear of Engineering Materials



Reliability of tribodata

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Tribology experimental research has been a significant improvement during the last years, leading to a significant amount of results and obviously an increasing number of papers appear every month. Unfortunately, in spite of this development, the obtained results usually are characterized by big scatter and significant discrepancies can be founded for the same materials if tested by different research teams. It seems even that the lack of repeatability is tolerable in the tribology research. The scatter found in the data has been frequently attributed to many variables involved in the experiments, namely: environment (especially humidity), contaminant layers, differences on test conditions, uncertainty on the results evaluation and rarely on the experimental equipment response.

This presentation aims to discuss several sources of imprecision which lead to scatter of the experimental tribology results. The effect of the dynamic response of equipments will be discussed. Furthermore, the usual experimental procedure used to calculate performance parameters, namely wear and friction coefficients will be compared with other solutions, including energy approaches.