

Optimization of the screw connection for closing a planetary gear unit

Motivation

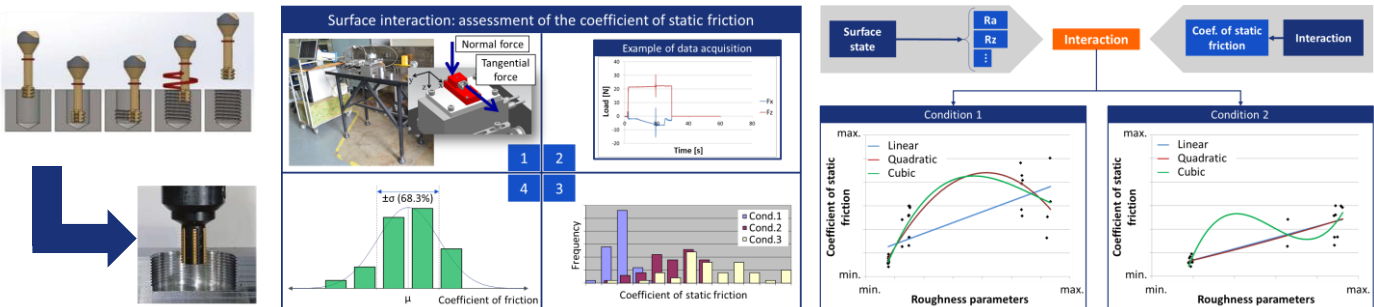
The bolt connection can transmit shear loads working under two principles: by the frictional force developed between the surfaces; and by the mechanical resistance of the bolts acting as pins. By the frictional force between surfaces, there is a direct dependence on the finishing done between the surfaces and its interaction, changing the friction coefficient, as well as the normal effort applied to the surface's union. Thus, the control over the surfaces that will be in contact, in terms of finishing and eventual coverings, is necessary.

Objective

Database development to understand the interaction between surfaces and their connection to the state of finishing in order to optimize the screw connection used to close a planetary gear unit

Approach

Considering that the proposed study would only be feasible with the possession of the roughness and static friction conditions, the execution of the project was divided in two fronts, being the study of the topographic conditions and the study of the static friction of the interaction between surfaces



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