

# GUIDE TO ROLL **LEVELING** CASSETTE FOR ALUMINIUM • 9 AUTHOR: Dr. Elena Silvestre Soriano

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In [19] the distribution of forces on the rolls is represented when the process is simulated with two types of material: one affected by the Bauschinger Effect and cyclic saturation, and another affected by cyclic hardening. The quantification of the difference in forces depending on the type of material is of great interest when dimensioning a leveler.

19. DIFFERENCE IN FORCE DISTRIBUTION IN MATERIALS INFLUENCED BY BAUSCHINGERY AND/OR CYCLIC HARDENING EFFECT.



These phenomena mainly influence the distribution of forces that the different rolls of the leveler must support.



### ADVANCED MATERIAL MODELS FOR THE CORRECT SIMULATION OF THE LEVELING PROCESS

Numerical models allow complex processes to be simulated when simple analytical models no longer have the ability to predict accurately. The aim of these models is to optimize processes in a shorter time and without high costs. In particular, the simulation of the leveling process makes it possible to analyze the quality of the leveling and to dimension the machines by predicting the forces and torques required for the rolls. However, for the results obtained by these simulation models to be able to correctly predict reality, it is necessary to define:

#### • The geometry and mesh design that reproduce the actual process [20].



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