Ref: 301-122
Apresentador **- Francisco Carlos Ceoni**

Residual stresses measurements using strain gages applied to aluminum wheels
Ceoni, F. C. (1); Santos, J. C. (2); Colosio, M. A. (2); Carmignotto, M. A. P. (3); Pereira, A. A. P. (3); Souza, A. C. (4); Rossi, J. L. (1)
(1) IPEN; (2) GMB; (3) IPT; (4) UEMS
This study aims the comparison of experimental work based on the measurement of residual stresses using strain gages and simulations using finite elements analysis (FEA), in the manufacture of components for the automotive industry. The project of automotive wheels incorporates the modeling with finite elements for simulation and manufacture. Although, still will exist the necessity of experimental validation of the simulations. The residual stresses studies of manufactured automotive wheels in light alloys (AlSi) still are very recent in the Brazilian industries and little information is being generated and shared. The residual stress is physical phenomenon resultant from the thermal processes that the alloys undergo during the manufacture process. Part of this study has as proposal, to extend the knowledge of the residual stresses phenomenon in wheels using strain gage extensometry and to make available this information to improve the database of the systems of analysis using finite elements.