Fatigue accumulation in oscillating termoelastoplastic structures with hysteresis, part II (mathematics)

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In this second part we continue with the mathematical analysis of a model for fatigue accumulation in oscillating beams and plates. In nontrivial cases, the process develops a singularity (material failure) in finite time. The main result consists in proving the existence and uniqueness of a strong solution in a time interval depending on the size of the data.

This is a joint work with Pavel Krejčí and Michela Eleuteri.

References

[1] *M. Eleuteri, J. Kopfová, P. Krejčí*: Fatigue accumulation in an oscillating plate. Discrete Contin. Dyn. Syst., Ser. S *6* (2013), 909-923.

[2] *M. Eleuteri, J. Kopfová, P. Krejčí*: Non-isothermal cyclic fatigue in an oscillating elastoplastic beam. Commun. Pure Appl. Anal. *12* (2013), 2973–2996.