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ABSTRACT:

Stationary and Non-Stationary Atomic-Migration-Controlled Processes:
Experimental and Simulation Studies

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This is a review of the extended experimental and simulation studies performed through the last three decades and concerning the atomic-migration-controlled relaxations and self-diffusion processes. The project was initiated in late 80' with the experiments on ultra-fine LRO relaxations in γ' -Ni₃Al which gave rise to the development of specifically dedicated Kinetic Monte Carlo (KMC) and Molecular Dynamics (MD) techniques elucidating the experimental results in atomistic scale. The reviewed studies [1,2] covered a range of intermetallic phases with diverse crystalline structures and allowed to recognize and understand a number of features specific to the courses of stationary (self-diffusion) and non-stationary (relaxations) processes.

[1] R.Kozubski, Prog.Mater.Sci. 41, 1-59, (1997).

[2] R. Kozubski, I.V. Belova, G.E. Murch, in Diffusion Foundations Vol 29 (2021) pp 95-115, Trans Tech Publications, Switzerland