67. Zvi Artstein and Alexander Vigodner, **Singularly perturbed ordinary differential equations with dynamic limits.** Proceedings of the Royal Society of Edinburgh 126A (1996), 541-569.

Abstract. Coupled slow and fast motions generated by ordinary differential equations are examined. The qualitative limit behaviour of the trajectories, as the small parameter tends to zero, is sought after. Invariant measures of the parametrized fast flow are employed to describe the limit behaviour, rather than algebraic equations which are used in the standard reduced order approach. In the case of a unique invariant measure for each parameter, the limit of the slow motion is governed by a chattering type equation. Without the uniqueness, the limit of the slow motion solves a differential inclusion. The fast flow in turn, converges in a statistical sense to the direct integral, respectively the set-valued direct integral, of the invariant measure.

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