100. Zvi Artstein, **Distributional convergence in planar dynamics and singular perturbations.** J. Differential Equations 201 (2004), 250-286.

Abstract. Motivated by applications to singular perturbations, the paper examines convergence rates of distributions induced by solutions of ordinary differential equations in the plane. The solutions may converge either to a limit cycle or to a heteroclinic cycle. The limit distributions form invariant measures on the limit set. The customary gauges of topological distances may not apply to such cases and do not suit the applications. The paper employs the Prohorov distance between probability measures. It is found that the rate of convergence to a limit cycle and to an equilibrium are different than the rate in the case of heteroclinic cycle; the latter may exhibit two paces, depending on a relation among the eigenvalues of the hyperbolic equilibria. The limit invariant measures are also exhibited. The motivation is stemmed from singularly perturbed systems with non-stationary fast dynamics and averaging. The resulting rates of convergence are displayed for a planar singularly perturbed system, and for a general system of a slow flow coupled with a planar fast dynamics.

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