AN LOCAL APPROACH IN AVERAGING THEORY

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Abstract. This work's goal will be to give a new form to apply the Averaging Theory for orders one and two. We present a local approach that could imply local or global results in the periodic annuli depending on the analyticity of the averaged functions. We use this new idea for a Lodka–Volterra differential system, a differential system of type Potential, and the entire family of quadratic isochronous differential systems, including the case that does not have birational linearization. This specific case, up to our knowledge, has yet to have a precedent study using Averaging Theory in the literature.

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