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The fundamental theorem of dynamical systems

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Abstract: We propose the title of The Fundamental Theorem of Dynamical Systems for a theorem of Charles Conley concerning the decomposition of spaces on which dynamical systems are defined. First, we briefly set the context and state the theorem. After some definitions and preliminary results, based both on Conley's work and modifications to it, we present a sketch of a proof of the result in the setting of the iteration of continuous functions on compact metric spaces. Finally, we claim that this theorem should be called The Fundamental Theorem of Dynamical Systems.

Keywords: chain recurrent set, attractor, decomposition

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