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Nonautonomous dynamics and its applications to paleoclimate

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The dynamics of systems with time-dependent forcing or coefficients has become a matter of considerable interest in the last couple of decades in general and in the last dozen years or so in the climate sciences in particular (Ghil, 2019; Ghil & Lucarini, 2020; Ghil, 2021; Tel et al., 2021; and references therein). We shall provide a general introduction to the topic and illustrate it with several paleoclimate-related examples (Crucifix, 2012; Riechers et al., 2022; Rousseau et al., 2022). Perspectives for further applications of the concepts and methods of the theory of pullback and random attractors and of their tipping points to paleoclimate will also be provided.

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