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# 简单分段线性混沌系统与SETMOS混沌系统的自适应广义同步

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**摘要：**

研究了基于SETMOS构成的、参数未知的类双涡卷混沌系统与结构不同的简单分段线性混沌系统的广义自适应同步方法。通过分析混沌系统的特点和广义同步的定义，基于李雅普诺夫稳定性理论，提出了一种新颖的、结构简单的自适应控制器和参数更新律，来实现不同结构、驱动系统参数未知的混沌系统的广义同步。这种方法还可以应用于不同结构或相同结构的其他同步问题，如自适应广义反同步等，应用范围较广。仿真结果进一步证实了该方法的有效性和可行性。

**关键词：** 非线性光学 自适应广义同步 数值仿真 SETMOS 参数未知

## Adaptive generalized synchronization of simple piecewise linear chaotic system and SETMOS chaotic system

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Abstract:

The generalized synchronization of different structure chaotic systems based on SETMOS with unknown parameters，double-scroll-like chaotic system and simple piecewise linear chaotic system is investigated with respect to an assumed function. By analyzing characters of the chaotic systems and the definition of the generalized synchronization, based on Lyapnuov stability theorem, novel and simple adaptive controllers and corresponding parameter update law are proposed for generalized synchronization of different chaotic systems with unknown parameters. Further, if the function is changed, the theory can also be applied for other synchronization for different structure chaotic systems, such as adaptive generalized anti-synchronization. Numerical simulation results are provided to show the effectiveness and feasibility of the proposed theory.

Keywords: nonlinear optics adaptive generalized synchronization numerical simulation SETMOS unknown parameter

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