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**Chaos in classical string dynamics in  $\hat{\gamma}$  deformed  $\text{AdS}_5 \times T^{1,1}$ .** (English) Zbl 1368.81131  
*Phys. Lett., B* 761, 475-481 (2016).

Summary: We consider a circular string in  $\hat{\gamma}$  deformed  $\text{AdS}_5 \times T^{1,1}$  which is localized in the center of  $\text{AdS}_5$  and winds around the two circles of deformed  $T^{1,1}$ . We observe chaos in the phase space of the circular string implying non-integrability of string dynamics. The chaotic behaviour in phase space is controlled by energy as well as the deforming parameter  $\hat{\gamma}$ . We further show that the point like object exhibits non-chaotic behaviour. Finally we calculate the Lyapunov exponent for both extended and point like object in support of our first result.

**MSC:**

- 81T30 String and superstring theories; other extended objects (e.g., branes) in quantum field theory Cited in 4 Documents
- 34D08 Characteristic and Lyapunov exponents of ordinary differential equations
- 70K55 Transition to stochasticity (chaotic behavior) for nonlinear problems in mechanics
- 34D45 Attractors of solutions to ordinary differential equations
- 70H08 Nearly integrable Hamiltonian systems, KAM theory
- 37J40 Perturbations of finite-dimensional Hamiltonian systems, normal forms, small divisors, KAM theory, Arnol'd diffusion
- 83E30 String and superstring theories in gravitational theory

**Full Text:** [DOI](#) [arXiv](#)

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