

Meson Spectrum in Holographic QCD and Deep Learning

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Abstract: In my talk, I will report that 5d theory on curved spacetime describing the meson spectrum was found by using deep learning [1]. This is 3rd example of the spacetime emerged with deep learning [2,3]. Based on holographic principle, we employed deep learning as a method obtaining bulk geometry dual to a certain QFT. Our input data was the spectrum of meson, QCD observables. Then experimental data of spectrum gave the metric of bulk spacetime as learning weight of neural network. I will explain about how the bulk spacetime emerged on neural network and discuss its consistency as bulk spacetime dual to QCD.

References

- [1] K. Hashimoto, T. Sumimoto, T. Akutagawa, *work in progress*
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- [3] K. Hashimoto, S. Sugishita, A. Tanaka and A. Tomiya, Phys. Rev. D98 (2018) 046019