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Traversable Wormholes in Massive Gravity theory

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Traversable wormhole or Morris-Thorne wormhole is one of wormholes to which human can travel. However, an exotic matter, the matter with negative pressure, must be included in order to construct such the wormhole. By introducing the cosmological constant into general relativity, it was found that one can minimize the existence of the exotic matter to a thin shell. In this presentation, we investigate possibility to construct the wormhole without the exotic matter in a modified gravity theory namely “massive gravity theory”. Massive gravity theory is a modified gravity theory in which a graviton acquires non-zero mass. For a class of solutions, we found that it is possible to obtain traversable wormhole without the exotic matter.

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