

Recently, Verlinde discussed that gravity can be understood as an entropic force caused by changes in the information associated with the positions of material bodies. In Verlinde's argument, the area law of the black hole entropy plays a crucial role. However, the entropy-area relation can be modified from the inclusion of quantum effects, motivated from the loop quantum gravity. In this note, by employing this modified entropy-area relation, we derive corrections to Newton's law of gravitation as well as modified Friedmann equations by adopting the viewpoint that gravity can be emerged as an entropic force.