

We consider a novel extension of the recently proposed mimetic gravity. The latter is a scalar-tensor theory which is able to describe dark matter on cosmological scales. Moreover, this theory can be considered as a low energy limit of the projectable Horava-Lifshitz gravity. The proposed novel extension directly couples gradients of the mimetic scalar field to the curvature tensor. These couplings introduce into the energy momentum tensor an anisotropic stress which is non-vanishing even at the first order in perturbations around a cosmological background. Further we show that such terms modify the formula for the speed of sound of scalar perturbations and even more importantly change the speed of propagation for the gravitational waves. The appearance of the anisotropic stress and the consequent nontrivial speed of propagation of the gravity waves are new phenomena which were not present in the previously studied mimetic models. Furthermore, we demonstrate that the effective Newton's gravitational constant in the background Friedmann equations is shifted in the presence of the novel couplings of the mimetic scalar field. We calculate the quadratic action for scalar and tensor perturbations and briefly discuss possible instabilities. Finally we consider the current observational bounds on the model.