

In this talk, I will consider the generalized Gauss-Bonnet action in 4-dimensional Weyl-Cartan space-time. The presence of torsion tensor and Weyl vector implies that the generalized Gauss-Bonnet action will not be a total derivative in four dimensional space-time. It will be shown that the higher than two time derivatives can be removed from the action by choosing suitable set of parameters. In the special case where only the trace part of the torsion remains, the model reduces to GR plus two vector fields. One of which is massless and the other is massive. I will show that there exists a non trivial region in parameter space where the model is free from tachyon and Ostrogradski instabilities. Relations to the generalized Proca action and Galileons will also be considered for the model.