

1106-20-1813

**Hung Cong Tran\*** (hctran@uwm.edu). *Relative divergence of finitely generated groups.*

We generalize the concept of divergence of finitely generated groups by introducing the upper and lower relative divergence of a finitely generated group with respect to a subgroup. Upper relative divergence generalizes Gersten's notion of divergence, and lower relative divergence generalizes a definition of Cooper-Mihalik. While the lower divergence of Cooper-Mihalik can only be linear or exponential, relative lower divergence can be any polynomial or exponential function. We examine the relative divergence (both upper and lower) of a group with respect to a normal subgroup or a cyclic subgroup. We also explore relative divergence of  $CAT(0)$  groups and relatively hyperbolic groups with respect to various subgroups to better understand geometric properties of these groups. (Received September 15, 2014)