1134-55-29 **Alexander Suciu** (a.suciu@neu.edu), Department of Mathematics, Northeastern University, BOSTON, MA 02115, and **He Wang*** (hew@unr.edu), Department of Mathematics & Statistics, University of Nevada, Reno, Reno, NV 89557. *Formality properties: generalizations and applications.*

Formality property arises from the rational homotopy theory developed by Quillen and Sullivan in 70's. Roughly speaking, the rational homotopy type of a formal simply-connected space is determined by its cohomology algebra. For each $k \geq 1$, the k-formality is a partial formality property filtered by the degree of the CDGA model. A closely related property of a finitely generated group is 1-formality, which allows one to reconstruct the rational pro-unipotent completion of the group solely from the cup products of degree 1 cohomology classes. We separate 1-formality into two complementary properties: graded-formality and filtered-formality, by studying various Lie algebras over a field of characteristic 0 attached to such group, including the associated graded Lie algebra, the holonomy Lie algebra and the Malcev Lie algebra. We explain how these notions behave with respect to split injections, coproducts, direct products, as well as field extensions. (Received June 24, 2017)