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**Christopher G Moseley\*** (cgm3@calvin.edu), Calvin University, Department of Mathematics and Statistics, 1740 Knollcrest Circle SE, Grand Rapids, MI 49546. *Lie algebras of homogeneous sub-Riemannian Engel manifolds*. Preliminary report.

Previous work by J. Clelland, G. Wilkens and C. Moseley on sub-Finsler Engel 4-manifolds classified homogeneous sub-Finsler structures with nonzero Cartan scalar. In current work we consider sub-Finsler Engel 4-manifolds with Cartan scalar equal to zero, in which the sub-Finsler structure descends to a sub-Riemannian structure on the base manifold. We present a complete classification of all Lie algebras corresponding to homogeneous sub-Riemannian Engel manifolds. This is joint work with G. Wilkens. (Received September 09, 2019)