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**J L Flynn\*** ([joshua.flynn@uconn.edu](mailto:joshua.flynn@uconn.edu)). *Sharp  $L^2$ -Caffarelli-Kohn-Nirenberg-Type Inequalities for the Grushin operator and Iwasawa Groups.*

Sharp  $L^2$ -Caffarelli-Kohn-Nirenberg inequalities are established for the Grushin vector fields and for Iwasawa groups (i.e., the boundary group of a real rank one noncompact symmetric space). For all but one parameter case, this is done by introducing a generalized Kelvin transform which is shown to be an isometry of certain weighted Sobolev spaces. For the exceptional parameter case, the best constant is found for the Grushin vector fields by introducing Grushin cylindrical coordinates and solving the transformed Euler-Lagrange equation. (Received July 30, 2020)