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The Carnot-Caratheodory distance and the infinite Laplacian.

In an arbitrary Carnot-Caratheodory space, we find geometric conditions under which the Carnot-Caratheodory distance is a viscosity solution to the infinite Laplace equation. Exploring these conditions in the Heisenberg group and the Grushin plane, we see these conditions are sharp. (Received January 22, 2010)