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**Evangelia Samiou\***, University of Cyprus, Department of Mathematics and Statistics, P.O Box 20537, 1678 Nicosia, Cyprus. *The X-ray transform on nilpotent Lie groups.*

The X-ray transform on a Riemannian manifold assigns to a compactly supported continuous function its integrals over geodesics. We prove injectivity and a support theorem for the X-ray transform on 2-step nilpotent Lie groups, and some other classes of nilpotent Lie groups. The results follow from a general principle for manifolds containing a totally geodesic plane through each point. (Received September 24, 2017)