

1116-53-1961      **Jonathan Epstein\*** ([jonathan.m.epstein.gr@dartmouth.edu](mailto:jonathan.m.epstein.gr@dartmouth.edu)), Mathematics Department, 27.  
N. Main St., Hanover, NH 03755. *Topological Entropy of Left-Invariant Magnetic Flows on 2-Step Nilmanifolds*. Preliminary report.

We consider magnetic flows on 2-step nilmanifolds  $M = \Gamma \backslash G$ , where the Riemannian metric  $g$  and the magnetic field  $\sigma$  are left-invariant. Our first result is that when  $\sigma$  represents a rational cohomology class and its restriction to  $\mathfrak{g} = T_e G$  vanishes on the derived algebra, then the associated magnetic flow has zero topological entropy. In particular, this is the case when  $\sigma$  represents a rational cohomology class and is exact. Our second result is the construction of a magnetic field on a 2-step nilmanifold that has positive topological entropy for arbitrarily high energy levels. (Received September 22, 2015)