1048-53-82 **Gloria Mari Beffa*** (maribeff@math.wisc.edu), Mathematics Department, Van Vleck Hall, University of Wisconsin, Madison, WI 53706. *On the preservation of invariants of arc-length type by geometric Hamiltonian curve flows.*

In this talk we will comment on curve differential invariants of arc-length type and on the preservation of these invariants under geometric Hamiltonian evolutions. We will describe how Hamiltonian evolutions of curves on homogeneous parabolic manifolds G/H with G semisimple often do not need to preserve an invariant of arc-length type, while in classical geometries of the form $G \ltimes R^n/G$, with G semisimple, preservation is almost always the case. We discuss the Riemannian sphere $SO(n+1)/SO(n)$ as a case connected to both these situations. (Received January 26, 2009)