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Suppose we have a point  $p$  in a Riemannian manifold and a subspace  $V_0$  in the tangent space at  $p$ . A curve  $\gamma(t)$  starting at  $p$  will be called admissible if  $\gamma'(t) \in V_t$  where  $V_t$  is the parallel translation of  $V_0$  along  $\gamma$ . The problem is to find the points that can be reached along admissible curves starting at  $p$ .

If  $V_0$  is contained in the tangent space of a totally geodesic submanifold  $T$ , then admissible curves starting at  $p$  must stay in  $T$ . Thus, our problem is related to totally geodesic submanifolds.

We will describe a setting for attacking this problem, and report on the result of applying this apparatus in the example of the three dimensional Heisenberg Group with a left invariant metric. (Received July 18, 2017)