962-22-1227   **Jon W. Short*** (`jwshort@indiana.edu`). *Weakened group topologies and locally isometric completions.* Preliminary report.

We will discuss a procedure for constructing metrizable group topologies on the subgroups and quotient groups of $\mathbb{R}^\omega$ that are weaker than the standard topologies. Even though great diversity exists in the topologies that arise by this method, we will show that with certain small restrictions the local structures (local compactness, dimensionality, local connectedness, etc.) of entire classes of these topologies can be characterized. In particular, we will show that there is a local isometry between the topological groups. We will then extend this local isometry, and thus our understanding of the local structure, to the completions of the topological groups. A relationship between these weakened topological groups and topological groups with a dense arc component of the identity will be discussed. (Received October 03, 2000)