1132-18-216 **Christopher L Rogers*** (chrisrogers@unr.edu), Department of Mathematics and Statistics, University of Nevada, Reno, 1664 N. Virginia Street, Reno, NV 89557. *The unicity of homotopy transfer: A deformation theoretic proof.*

Suppose we are given a cochain complex A, a homotopy algebra B of some particular type (e.g., a homotopy associative, homotopy Lie, or homotopy Gerstenhaber algebra) and a quasi–isomorphism of complexes $\phi\colon A \to B$. Then a solution to the "homotopy transfer problem" is a pair consisting of a homotopy algebra structure on A, and a lift of ϕ to an equivalence of homotopy algebras $A \simeq B$.

Using techniques from algebraic deformation theory, I will give an explicit construction of the space of solutions to the homotopy transfer problem. I will show that when we are working over a field of characteristic 0 that: (1) the space of solutions is non-empty, and (2) it is contractible. The first statement implies that a homotopy equivalent transferred structure always exists, and the second implies that this structure is unique, up to homotopy, in the strongest possible sense. (Received July 22, 2017)