

1112-18-14

Vasily A. Dolgushev* (vald@temple.edu), Department of Mathematics, Temple University, 1805 N. Broad St. Wachman Hall, Rm. 638, Philadelphia, PA 19122, and **Alexander E. Hoffnung** and **Christopher L. Rogers**. *What do homotopy algebras form?*

Homotopy algebras and their generalizations appear in constructions of string topology, in rational homotopy theory, symplectic topology, deformation quantization, and quantum field theory. In this talk, I will show that homotopy algebras of a fixed type form a category enriched over L_∞ -algebras. I will also show that this enrichment gives us a higher categorical structure which stands behind the homotopy theory of homotopy algebras. This work is motivated by D. Tamarkin's answer to V. Drinfeld's question "What do dg categories form?" and by papers of A. Berglund, V. Dotsenko, E. Getzler, V. Hinich, A. Lazarev, and N. Poncin. This talk is based on paper arXiv:1406.1751. (Received May 14, 2015)