1176-13-323　　　　　**Luigi Ferraro**, **Mohsen Gheibi**, **David Jorgensen**, **Nicholas Packauskas***
(`nicholas.packauskas@cortland.edu`) and **Josh Pollitz**. *The homotopy Lie algebra of a Tor-independent tensor product.*

In this article we investigate a pair of surjective local ring maps $S_1 \leftarrow R \rightarrow S_2$ and their relation to the canonical projection $R \rightarrow S_1 \otimes_R S_2$, where S_1, S_2 are Tor-independent over R. Our main result asserts a structural connection between the homotopy Lie algebra of S, denoted $\pi(S)$, in terms of those of R, S_1 and S_2, where $S = S_1 \otimes_R S_2$. Namely, $\pi(S)$ is the pullback of graded Lie algebras along the maps $\pi(S_i) \rightarrow \pi(R)$ in a wide variety cases, including when the maps above have residual characteristic zero. Consequences to the main theorem include structural results on Tor algebras, as well as an equality relating the Poincaré series of the common residue field of R, S_1, S_2 and S, and that the map $R \rightarrow S$ can never be Golod. (Received January 25, 2022)

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