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Oana Veliche* (o.veliche@northeastern.edu), 360 Huntington Ave, Boston, MA 02115-5005, and **Van Nguyen**. *A construction of a truncated minimal free resolution of the residue field*. Preliminary report.

In a paper from 1968, Golod proved that the Betti sequence of the residue field of a local ring attains the upper bound given by Serre if and only if the homology algebra of the Koszul complex of the ring has trivial multiplications and trivial Massey operations. This is the origin of the notion of Golod ring. Using the Koszul complex components as building blocks he also constructed a minimal free resolution of the residue field. In a recent project with Van Nguyen, we extend this construction up to the degree five and explicitly show how the multiplicative structure of the homology of the Koszul algebra is involved, including the triple Massey products. The talk will discuss about various consequences of this construction. (Received August 03, 2020)