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Lars Winther Christensen* (lars.w.christensen@ttu.edu). *Homology of tensor product complexes.*

H.-B. Foxby was a pioneer in the study of homological properties of complexes of modules over commutative noetherian rings. In a paper from 1979 he includes a *derived depth formula*,

$$\text{depth}_R(M \otimes_R^L N) = \text{depth}_R M + \text{depth}_R N - \text{depth } R ,$$

that holds for complexes M and N of modules over a local ring R , provided that they have non-zero homology in only finitely many degrees and one of them is isomorphic in the derived category to a bounded complex of flat R -modules. The *Auslander–Buchsbaum formula* (1957) is a special case of this formula, and so is Auslander’s *depth formula* for Tor-independent modules (1961).

Over the past 35 years, a number of authors have revisited Foxby’s derived depth formula and generalized it in several directions. I’ll survey these developments up to and including work in progress with Celikbas, Liang, and Piepmeyer. (Received July 29, 2014)