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Scott Balchin, Kyle Ormsby* (ormsbyk@reed.edu), **Angélica Osorno** and **Constanze Roitzheim**. *Model structures on finite linear orders*. Preliminary report.

We enumerate the collection of Quillen model structures on the category $[n]$ associated with the finite linear order $0 < 1 < \cdots < n$, exhibiting surprising connections with Catalan-type combinatorics and the Tamari lattice (*i.e.*, associahedron) along the way. This uses previous work of the authors on the theory of N_∞ -operads for cyclic groups of prime power order. (Received August 24, 2021)