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Vigleik Angeltveit* (vigleik@math.uchicago.edu), University of Chicago, Department of Mathematics, 5734 S University Ave, Chicago, IL 60607. *Enriched Reedy Categories*.

We define the notion of an enriched Reedy category, and show that if \mathcal{A} is a \mathcal{C} -Reedy category for some symmetric monoidal model category \mathcal{C} and \mathcal{M} is a \mathcal{C} -model category, the category of \mathcal{C} -functors and \mathcal{C} -natural transformations from \mathcal{A} to \mathcal{M} is again a model category. As an application we define an enriched Reedy category using the Stasheff associahedra operad, and show that topological Hochschild (co)homology of an A_∞ ring spectrum is a functor from this Reedy category. In this case, geometric realization can be defined using another family of polyhedra called cyclohedra. (Received February 11, 2008)