1038-18-254   **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)