1143-03-486 **Jeffrey Bergfalk*** (jeffrey@matmor.unam.mx), Centro de Ciencias Matemáticas, UNAM, Campus Morelia, 42656 Morelia, Michoacan, Mexico. *Large cardinals and the cohomology of the ordinals.*

The collection of height-κ coherent families of integer-valued functions has a natural group structure. Its quotient by the group of height-κ trivial families of such functions is more handily and suggestively denoted as $\check{\mathrm{H}}^1(\kappa, \underline{\mathbb{Z}})$. (Here $\underline{\mathbb{Z}}$ denotes the constant sheaf of integers.) Hence $\check{\mathrm{H}}^1(\omega, \underline{\mathbb{Z}}) = 0$, while Todorcevic's rho functions canonically witness that $\check{\mathrm{H}}^1(\omega_1, \underline{\mathbb{Z}}) \neq 0$, and for κ of higher cofinality, $\check{\mathrm{H}}^1(\kappa, \underline{\mathbb{Z}}) \neq 0$ is (modulo large cardinals) an assertion independent of the ZFC axioms. These recognitions cue the more general study of the Čech cohomology of the ordinals: each $\check{\mathrm{H}}^n(\kappa, \underline{\mathbb{Z}}) \neq 0$ denotes an incompactness principle tending to hold on regular cardinals $\kappa \geq \omega_n$, but in tension with large cardinals — a tension we'll illustrate with several sample theorems. We'll close with the largely open question of where these principles can fail, a question evidently requiring large cardinal assumptions and a better understanding of higher coherence for its general solution. (Received August 20, 2018)