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Volume growth, de Rham cohomology, and the Higson compactification

We construct a variant of (real) DeRham cohomology and apply it to prove that the integral cohomology of the Higson compactification of $\mathbb{R}^n$ has uncountably generated nth integral cohomology. Earlier work of Dranishnikov-Ferry-Weinberger shows that the Novikov Conjecture follows from the mod p acyclicity of the Higson compactification. Our construction suggests that the integral cohomology of the Higson compactification may have a real vector space structure.