A conjectured cohomological description of special values of zeta-functions.

Abstract:

Let $X$ be a regular scheme, projective and flat over $\text{Spec } \mathbb{Z}$. We give a conjectural formula in terms of motivic cohomology, singular cohomology and de Rham cohomology for the special value of the zeta-function of $X$ at any rational integer. We will explain how this reduces to the standard formula for the residue of the Dedekind zeta-function at $s = 1$. 