

András Némethi

Title: Lattice cohomology I

Abstract: We define the combinatorial lattice cohomology associated with a lattice and a weight function. We introduce their Euler characteristics, and we show that in the presence of the "Combinatorial Duality Property" the Euler characteristics can be read easily from the combinatorial data. Then we list several examples. Associated with a normal surface singularity we can consider the "topological" and the "analytic" weights, hence the corresponding lattice cohomologies. We discuss some of their properties.