

# Logarithmic differential forms and residues

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Logarithmic differential forms first appeared along normal crossing divisors in Deligne's construction of the mixed Hodge structure. They were later generalized by Kyoji Saito along reduced hypersurfaces in his study of the Gauss-Manin connection on base space of the versal deformation of isolated hypersurface singularities. The discriminant in such a base space was the first prominent example of a so-called free divisor. We give a gentle introduction to this topic mostly based on examples and simple calculations. Then we explain a relation between logarithmic residues and normal crossing divisors. We end with an outlook on recent generalizations of the notion of free divisor to higher codimension.