

A Leray model for the Orlik-Solomon algebra of a matroid

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We construct a combinatorial counterpart of the Leray models for hyperplane arrangement complements. For any matroid, we give a presentation for a bigraded differential graded algebra. If the matroid is realizable over \mathbb{C} , this is the familiar Morgan model for a hyperplane arrangement complement, embedded in a blowup of projective space. In general, we obtain a cdga that interpolates between the Chow ring of a matroid and the Orlik–Solomon algebra.

This is joint work with Christin Bibby and Graham Denham.