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Counting fibres of the Hadamard product using Bergman fans Title: Counting fibres of the Hadamard product using Bergman fans

The Hadamard product of two linear spaces is the set of coordinate-wise products of points. This product is matroidal in the sense that properties of the product can be derived from the matroids of the original pair of linear spaces. In particular, the number of elements in a generic fibre. Thus, we introduce the flip product, an operation that assigns a non-negative integer (or infinity) to a any pair of matroids on the same ground set. This operation unifies a natural step in rigidity theory for calculating realisation numbers in various contexts. For example, the flip product of the cycle matroid of a minimally generically 2-rigid graph with itself is the complex realisation number that graph.