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An Alpine View of Enumeration in Hyperplane Arrangements

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We consider a map, defined by Stembridge, that associates descents to peaks in the context of quasisymmetric functions. When applied to geometric lattices (matroids), this map gives the complete enumeration of chains of faces in any hyperplane arrangement having that lattice as its lattice of intersections. This result can be viewed as an extension to chains of the classical results of Zaslavsky that showed how face counts in arrangements are determined solely by the underlying lattice of intersections.