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From Permutahedron to Associahedron

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ABSTRACT. For each finite real reflection group W, we identify a copy of the type-W simplicial generalised associahedron inside the corresponding simplicial permutahedron. This defines a bijection between the facets of the generalised associahedron and the elements of the type-W non-crossing partition lattice which is more tractable than previous such bijections. We show that the simplicial fan determined by this associahedron coincides with the Cambrian fan for W.

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