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Fundamental polytopes of metric trees via hyperplane arrangements

The problem of a combinatorial classification of finite metric spaces via their *fundamental polytopes* was suggested by Vershik in 2010, but to date the structure of these polytopes (even their face numbers) remains largely unknown. In this talk I will explain how to associate a hyperplane arrangement associated to every split pseudometric and how to use the combinatorics of the underlying matroid in order to compute the face numbers of fundamental polytopes and Lipschitz polytopes of tree-like metrics. I will discuss how to apply our results to specific examples and, time permitting, I will briefly comment on the potential of our model beyond tree-like metrics. This is joint work with Linard Hoessly.