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Low elements and Shi arrangements

Low elements form a special finite subset of a given Coxeter group. They appeared in relation with the study of the word problem for Artin-Tits groups via Garside theory. In this talk, I will explain that, in the case of an affine Coxeter group, they share an intimate link with the corresponding Shi arrangements. Shi arrangements were introduced by Shi in the 80's to study Kazhdan-Lusztig cells in affine types. Finally, I will discuss some results and conjectures on how to generalize the affine framework to any infinite Coxeter group. (joint work with Nathan Chapelier (UQAM))