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The braid group of crystallographic complex reflection groups.

Crystallographic complex reflection groups have infinite order and stabilize a lattice in complex space. For the special case of affine Weyl groups, Viet Dung showed that the fundamental group of the space of regular orbits has a presentation mimicking the Coxeter presentation of the reflection group—one need only remove the condition that the generators have finite order. Malle conjectured that the same holds for all crystallographic complex reflection groups with their Coxeter-like presentations. We discuss some recent results on this conjecture obtained by adapting Viet Dung’s method of semi-cell complexes to the setting of complex reflection groups. A complication in this new setting arises from the fact that the subgroup stabilizing a point may not be generated by reflections, unlike in the case of finite reflection groups. (Received September 20, 2016)