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Michael L Mihalik* (michael.l.mihalik@vanderbilt.edu), Department of Mathematics, Stevenson Center for Mathematics, Vanderbilt University, Nashville, TN 37240, and **Steven Tschantz**. *JSJ and accessibility results for Coxeter groups.*

Sela introduced the idea of JSJ-decompositions for groups. The idea is to consider a class \mathcal{C} of groups and splittings of groups in \mathcal{C} by groups in a class \mathcal{E} . For $G \in \mathcal{C}$ the goal is to produce a unique graph of groups decomposition \mathcal{T} of G with edge groups in \mathcal{E} so \mathcal{T} reveals all splittings of G by groups in \mathcal{E} . If V is a vertex group of \mathcal{T} then there is no \mathcal{E} -group that splits both G and V , or V is an “orbifold group” with “surface group-like” structure.

For a Coxeter system (W, S) we produce a unique (reduced) JSJ-decomposition \mathcal{T} for splittings of W over virtually abelian subgroups. We show \mathcal{T} is “visual” and algorithmic. If $V \subset S$, generates an orbifold group of \mathcal{T} then $V = K \cup M$, where $\langle M \rangle$ is virtually abelian, $\langle K \rangle$ is virtually a surface group and $\langle V \rangle = \langle M \rangle \times \langle K \rangle$. Our decomposition is a reduced Fujiwara-Papasoglu decomposition.

Accessibility results are analogous to JSJ results. We discuss an accessibility result for splittings of finitely generated Coxeter groups over “minimal” splittings. (Received September 02, 2009)