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Monodromy Groups of Belt Polyhedra

The monodromy group of a polyhedron corresponds to its minimal regular cover. Recent work in the study of abstract polytopes has shown that the monodromy group has an interesting role in the study and investigation of the combinatorial structure of abstract polytopes. However, the collection of well understood examples of structural studies of the monodromy group for abstract polytopes is still quite small.

In this talk we will discuss the preliminary results of an investigation into the structure of the monodromy groups for several infinite families of polyhedra formed by attaching symmetric belts of polygonal faces to a pair of parallel n-gons. For example, the n-prism is formed by attaching a belt of squares to two parallel n-gons. Of particular interest is the way in which each of the infinite families corresponds to a parameterized family of abelian extensions of the automorphism group of a regular polyhedron.