

A basic Thurston contribution - the meaning of wall paper symmetry- orbifolds
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Poincare taught us how to construct periodic patterns by studying certain developments along paths in a space. This describes completely how unbranched covering spaces can be constructed by knowing the folded up space. EG the topology of the torus constructs the plane with the group of integral translations. This is remarkable.

Thurston taught how to construct wall paper patterns with their symmetries from the folded up gadget which is more than a topological space, it is an orbifold which has an underlying topological space. It is remarkable that this insight of Thurston is the first new understanding of the reverse process of forming the quotient since the time of Poincaré.

The talk will survey this a little and then use it to understand something about three manifolds.