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Kempner Colloquium

The differential structure of an orbifold

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We will begin by looking at what an orbifold is in the classical way. Then, fixing an orbifold, we forget all of the information contained in the orbifold structure except for the topology, stratification, and some integer labels on certain strata. From here, we reconstruct the entire orbifold structure.
This is important, because the "minimal data" contained in the topology, stratification, and labels can all be obtained from the ring of smooth functions on an orbifold. More categorically, there is an essentially injective functor from the "category" of orbifolds (which has different definitions depending on your perspective, not all equivalent) to the category of so-called differential spaces: sets equipped with sheaves of "smooth" functions with "smooth" maps between them. This a priori is unexpected, since in general the ring of smooth functions on a space built out of quotients, such as an orbifold, forgets the local quotient structure.

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12:10 PM - 12:50 PM
MATH 350