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A fresh view on string orbifolds

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In quantum field theory, an orbifold is a way to obtain a new theory from an old one by gauging a finite global symmetry. This definition of orbifold does not make sense for quantum gravity theories, that admit (conjecturally) no global symmetries. In string theory, orbifold refers to the gauging of a global symmetry on the world-sheet theory describing the fundamental string. Alternatively, it is a way to obtain a new string background from an old one by quotienting some isometry. We discuss a new formulation of string orbifolds in terms of the group of gauge symmetries of a given string model. In such a formulation, the parent' and thechild' theories correspond to different ways of breaking or gauging all potential global symmetries of their common subsector. We also comment on the dependence of this orbifold procedure on the duality frame.

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