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An overview of Quivers, Geometry and the McKay Correspondence in String Theory

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April 23, 2024 - 16:30

Abstract

In string theory, many interesting mathematical concepts such as quivers, Calabi-Yau manifolds, toric geometry, singularity resolutions, etc naturally arise. I will begin by giving a general explanation of why this is the case, and in which sense they are related. If time allows, we will discuss the McKay correspondence — a very intriguing observation made in the 80's between some finite groups, Lie algebras and algebraic singularities — and how it is related to string theory.

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