

# Stable Homotopy Group, Higher Algebra and the Telescope Conjecture

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A fundamental motivating problem in homotopy theory is the attempt to the study of stable homotopy groups of spheres. The mathematical object that binds stable homotopy groups together is a spectrum. Spectra are the homotopy theorist abelian groups, they have a fundamental place in algebraic topology but also appear in arithmetic geometry, differential topology, mathematical physics and symplectic geometry. In a similar vein to the way that abelian groups are the bedrock of algebra and algebraic geometry we can take a similar approach of spectra. I will discuss the picture that emerges and how one can use it to learn about the stable homotopy groups of spheres.

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