

Kazhdan-Lusztig conjectures and shadows of Hodge theory

Abstract:

Hodge theory provides deep structure on the cohomology ring of smooth projective varieties. Remarkably, shadows of this structure are present in certain representation theoretic objects ("Soergel bimodules") which (as far as we know) do not always have origins in geometry. I will try to explain why uncovering this structure gives new proofs of some important conjectures of Kazhdan and Lusztig from 1979. No knowledge of representation theory or Hodge theory will be assumed.

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