

This volume contains the proceedings of the CATS4 Conference on Higher Categorical Structures and their Interactions with Algebraic Geometry, Algebraic Topology and Algebra, held from July 2–7, 2012, at CIRM in Luminy, France.

Over the past several years, the CATS conference series has brought together top level researchers from around the world interested in relative and higher category theory and its applications to classical mathematical domains.

Included in this volume is a collection of articles covering the applications of categories and stacks to geometry, topology and algebra. Techniques such as localization, model categories, simplicial objects, sheaves of categories, mapping stacks, dg structures, hereditary categories, and derived stacks, are applied to give new insight on cluster algebra, Lagrangians, trace theories, loop spaces, structured surfaces, stability, ind-coherent complexes and 1-affineness showing up in geometric Langlands, branching out to many related topics along the way.

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