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**Ezra Miller\*** ([ezra@math.duke.edu](mailto:ezra@math.duke.edu)). *Sticky central limit theorems on polyhedral spaces*. Preliminary report.

Certain singular spaces, including polyhedral complexes such as “tree spaces” that parametrize metric phylogenetic trees on fixed sets of taxa, increasingly arise as sample spaces in modern statistics problems. (This is distinct from algebraic statistics, where potentially singular spaces typically parametrize models, not sample points.) Applications to areas such as biology, medicine, and image analysis require understanding the asymptotics of distributions on such spaces. In the surprisingly common circumstance when Fréchet (intrinsic) means of distributions on polyhedral spaces lie on faces of low dimension, central limit theorems can exhibit non-classical “sticky” behavior: positive mass can be supported on thin subsets of the ambient space. This talk reports on current investigations by a Working Group at the Statistical and Applied Mathematical Sciences Institute (SAMSI) program on Analysis of Object Data. (Received January 19, 2011)