Contribution ID: **31**   Type: **not specified**

From Little Strings to M5-branes and Number Theory via a Quasi-Topological Sigma Model on Loop Group

Friday, 4 June 2021 10:30 (1h 15m)

We unravel the ground states and left-excited states of the A_{k-1} N=(2,0) little string theory. Via a theorem by Atiyah, these sectors can be captured by a supersymmetric quasi-topological sigma model on CP^1 with target space the based loop group of SU(k). The ground states, described by L^2-cohomology classes, form modules over an affine Lie algebra, while the left-excited states, described by chiral differential operators, form modules over a toroidal Lie algebra. We also apply our results to unravel the 1/2 and 1/4 BPS sectors of the M5-brane worldvolume theory, which spectrum we find to be captured by cousins of modular and automorphic forms, respectively, that reveal an intrinsic S- and T-duality of the worldvolume theory.

Presenter: TAN, Meng-Chwan (NUS Singapore)