

## Poster information of Chongchuo Li

<b>Title</b>	Infinite Distance Networks in Field Space and Charge Orbits
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<b>Abstract</b>	<p>The Swampland Distance Conjecture proposes that approaching infinite distances in field space an infinite tower of states becomes exponentially light. We study this conjecture for the complex structure moduli space of Calabi-Yau manifolds. In this context, we uncover significant structure within the proposal by showing that there is a rich spectrum of different infinite distance loci that can be classified by certain topological data derived from an associated discrete symmetry. We show how this data also determines the rules for how the different infinite distance loci can intersect and form an infinite distance network. We study the properties of the intersections in detail and, in particular, propose an identification of the infinite tower of states near such intersections in terms of what we term charge orbits. These orbits have the property that they are not completely local, but depend on data within a finite patch around the intersection, thereby forming an initial step towards understanding global aspects of the distance conjecture in field spaces. Our results follow from a deep mathematical structure captured by the so-called orbit theorems, which gives a handle on singularities in the moduli space through mixed Hodge structures, and is related to a local notion of mirror symmetry thereby allowing us to apply it also to the large volume setting. These theorems are general and apply far beyond Calabi-Yau moduli spaces, leading us to propose that similarly the infinite distance structures we uncover are also more general.</p>