RANK ONE STRANGE DUALITY ON ABELIAN SURFACES

BARBARA BOLOGNESE

Abstract. In this talk, we will see how Le Potier's strange duality morphism works on rank one moduli spaces. First, we will introduce strange duality as a natural pairing between some tautological line bundles on the Hilbert schemes of point of any smooth projective surface. Then we will work on abelian surfaces, whose unique and rich geometry will allow us to unbalance such natural pairing, creating new dualities. This geometric setting will also involve the representation theory of discrete Heisenberg group, which we will explore and apply. Finally, we will connect the rank one setup to the theory of Theta divisors on higher rank moduli spaces on elliptic surfaces using Fourier-Mukai techniques.