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**Haitian Yue\*** (haityue@gmail.com), 9J Brandywine, Amherst, MA 01002. *Well-posedness for the cubic NLS on tori.*

The cubic nonlinear Schrödinger equation (NLS) is energy-critical ( $s_c = 1$ ) with respect to the scaling symmetry, where  $s_c$  is the scaling critical regularity. The initial value problem (IVP) of cubic NLS is scaling invariant in the Sobolev norm  $H^1$  of scaling critical regularity. First this talk introduce the deterministic global well-posedness result of cubic NLS on 4d-torus ( $T^4$ ) in the critical regime (with  $H^1$  initial data). Second we consider the cubic NLS in the super-critical regime (with  $H^s$  data,  $s < 1$ ). A probabilistic approach is applied to obtain an “almost sure” well-posedness result for the cubic NLS on tori ( $T^d, d \geq 3$ ). (Received February 19, 2018)