In this talk, the constructions of Hall algebras of some orbit triangulated categories via derived Hall algebras for derived categories will be presented and the relations between them will be characterized. As an application, a natural algebra homomorphism from the Ringel-Hall algebra of a hereditary algebra to the corresponding quantum cluster algebra will be provided. This gives alternative proofs of some results recently obtained by Berensein and Rupel. This talk is based on a joint work with Ming Ding and Fan Xu. (Received August 09, 2015)