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Jie Xiao* (jxiao@math.tsinghua.edu.cn), **Fan Xu** (fanxu@mail.tsinghua.edu.cn) and **Minghui Zhao** (zhaomh@bjfu.edu.cn). *Green Formula and Restriction Functor for Hall Algebras and Quantum Groups.*

We generalize the categorical construction of a quantum group and its canonical basis introduced by Lusztig to the generic form of the whole Ringel-Hall algebra. We clarify the explicit relation between the Green formula and the restriction functor. By a geometric way to prove the Green formula, we show that the compatibility of multiplication and comultiplication of a Ringel-Hall algebra can be categorified under Lusztig's framework. This talk is based on a joint work with F. Xu and M. Zhao. (Received July 13, 2019)