

From noncommutativity to equivariant geometry

[Yuta Yamazaki](#), [M. A. Sadik-Moghaddam](#), [Takashi Yamazaki](#)

Abstract

We construct a class of equivariant geometries in which noncommutativity is not preserved but it is preserved only in the form of a noncommutative relation between the noncommutative geometries. The equivariant geometry is generated by statistical mechanics, and it is shown that the equivariant geometries are stable in the thermodynamic limit, with the exception of a classical one in which the thermalization energy saturates the thermal energy of the equivariant geometry. In this way we obtain an equivariant class of noncommutative equivariant geometries.