

Boundary states of a bulk gapped ground state in 2-d quantum spin systems

Yoshiko Ogata

1. Abstract

We introduce a natural mathematical definition of boundary states of a bulk gapped ground state, in the operator algebraic framework of 2-d quantum spin systems. With approximate Haag duality at the boundary, we derive a C^* -tensor category M out of such boundary state. Under a non-triviality condition of the braiding in the bulk, we show that the Drinfeld center (with an asymptotic constraint) of M is equivalent to the bulk braided C^* -tensor category of the bulk.