

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

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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 the 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*.

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