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**Measuring nontrivial fusion rule of Majorana fermions in inhomogeneous transverse Ising chain** YAN CHEN, YINCHEN HE, Fudan University, China — We describe various dynamical processes aimed to create and fuse Majorana fermions in an inhomogeneous Kitaev's wire. We show that, with the undesired excitations suppressed by inhomogeneity, fusion of Majorana fermions will result in universal measurable excitations, which can serve as a direct verification of Majorana fermions fusion rule. Moreover, we design a protocol to detect the oscillatory tunneling between two unpaired Majorana fermions. Most remarkably, our proposal is valid for transverse Ising chain, which provides a promising way to test nontrivial properties of Majorana fermions experimentally.

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