Localization properties of the disordered *XXZ* chain

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We will survey several recent results on many-body localization properties of the disordered *XXZ* chain in the low energy (zero temperature) droplet regime, based on works by Beaud and Warzel as well as Elgart, Klein and Stolz. Among the properties shown are dynamical localization, such as absence of group transport in the form of zero-velocity Lieb-Robinson bounds and quasi-locality of the time evolution, and eigenstate localization in the form of exponential clustering of correlations and area laws laws for the bipartite entanglement.

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