

Many-body localization from displacement transformations

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The phenomenon of many-body localization (MBL) can be understood in terms of the existence of localized integrals of motion (IOMs). However, the actual computation of these IOMs throughout the phase diagram still is a daunting task. Recently we developed a method to calculate IOMs, based on sequential displacement transformations. We present data on the structure of the IOMs themselves, such as overlaps with original operators, as well as on the effective interactions between the IOMs. Finally, we present yet another way of computing IOMs using few-particle exact diagonalization and we will discuss possible future variations of the displacement transformation method.