

# THE NO CORE SHELL MODEL IN AN EFFECTIVE FIELD THEORY FRAMEWORK

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One of the outstanding problems in nuclear-structure theory is the construction of two-body (and higher-body) effective interactions in a model (or basis) space. In this talk we discuss a recently developed approach to this problem [1], where one starts with an effective field theory (EFT), which contains only nucleonic fields and is formulated directly in a No-Core-Shell-Model (NCSM) space [2]. Such an approach helps us to understand the gross features of nuclear systems from a QCD perspective. It also leads to a new method for the construction of effective interactions suitable for NCSM calculations, which avoids uncontrolled approximations. Finally, we present applications to light nuclei within the pionless EFT and discuss future applications and extensions, such as to the pionfull EFT [1, 3, 4].

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## References

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