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| Title: | A theoretical perspective on the suitability of bimodal Floquet theory in the description of heteronuclear decoupling in solids |
| Authors: | Garg, Rajat (/jspui/browse?type=author&value=Garg%2C+Rajat)<br>Ramachandran, Ramesh (/jspui/browse?type=author&value=Ramachandran%2C+Ramesh) |
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| Abstract: | In this report, the suitability of bimodal Floquet theory in the description of heteronuclear decoupling experiments in solids is clarified under varied experimental conditions. Employing an operator equivalent of perturbation theory, a generalized framework for explicating the effects of multiple pulse schemes on internal spin interactions is described in the Floquet space. In contrast to in silico based methods, the analytic expressions derived from the present formalism yield faster results and offer better insights into the optimal conditions desired for maximizing the decoupling efficiency in experiments. Through appropriate examples, the validity of the approximations employed in the analytic theory is examined methodically through a comparison between analytic and numerical simulations. |
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