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Title:	Nuances of multi-quantum excitation in solid state NMR of quadrupolar nuclei†
Authors:	Srivastava, Deepansh (/jspui/browse?type=author&value=Srivastava%2C+Deepansh) Ramachandran, Ramesh (/jspui/browse?type=author&value=Ramachandran%2C+Ramesh)
Keywords:	Heuristic approach Multi-quantum Agreement
Issue Date:	2013
Publisher:	American Chemical Society
Citation:	RSC Advances, 3(47),pp.25231-25236.
Abstract:	In this article, a simple heuristic approach that is in agreement with the density operator formalism is presented for understanding the mechanism of multi-quantum (MQ) excitation in half-integral quadrupolar systems. Employing the population level diagram of the nuclear spin states, the effect of radio-frequency (RF) pulses on multi-level systems is described. Based on this approach, alternate schemes that involve non-equilibrium spin states are proposed for improving the sensitivity of MQ experiments in spin 3/2 and 5/2 systems. Additionally, the utility of frequency sweep techniques in the excitation of MQ transitions is discussed. The results obtained from the analytic theory are substantiated through numerical simulations.
URI:	<a href="https://pubs.rsc.org/en/Content/ArticleLanding/RA/2013/C3RA45195J#!divAbstract">https://pubs.rsc.org/en/Content/ArticleLanding/RA/2013/C3RA45195J#!divAbstract</a> ( <a href="https://pubs.rsc.org/en/Content/ArticleLanding/RA/2013/C3RA45195J#!divAbstract">https://pubs.rsc.org/en/Content/ArticleLanding/RA/2013/C3RA45195J#!divAbstract</a> ) <a href="http://hdl.handle.net/123456789/2717">http://hdl.handle.net/123456789/2717</a> ( <a href="http://hdl.handle.net/123456789/2717">http://hdl.handle.net/123456789/2717</a> )
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