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Magn. Reson. Discuss., community comment CC2
https://doi.org/10.5194/mr-2022-18-CC2, 2022

Reply on CC1

Tom Barbara

Community comment on "Simulation of NMR spectra at zero- and ultra-low field from A to Z – a tribute to Prof. Konstantin L'vovich Ivanov" by Quentin Stern and Kirill Sheberstov, Magn. Reson. Discuss., https://doi.org/10.5194/mr-2022-18-CC2, 2022

Late last night I recalled another aspect of the NMR spectra simulation problem. This method is not covered in Paul Corio's book and though old, it does appear to supply an "original" perspective not usually encountered in the NMR field. This is the method of Primakoff and Holstein and the close cousin invented by Schwinger, where bosonic states are used to map angular momentum states. A nice, relatively recent effort at expostion is offered by J.A. Gaymfi and this can be found on the physics arxiv:

arXiv:1907.07122v1

The author works out the use of these for zero field Hamiltonians. Beware that it is "very mathematical".