Potential operators associated with Hankel-Dunkl and Laguerre-Dunkl expansions

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The talk is based on the joint work with Krzysztof Stempak

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We study analogues of Riesz and Bessel potentials in the frameworks related to the Dunkl Laplacian and the Dunkl harmonic oscillator, where the underlying group of reflections is isomorphic to $\boldsymbol{Z}_2^d$. We discuss sharp or qualitatively sharp pointwise estimates of the associated potential kernels. We also describe those $1 \leq p, q \leq \infty$, for which the potential operators are $L^p - L^q$ bounded. The latter results are counterparts of the classical Hardy-Littlewood-Sobolev fractional integration theorem in the above mentioned settings.

References

[1] A.Nowak, K.Stempak, *Sharp estimates for potential operators associated with Laguerre and Dunkl-Laguerre expansions*, preprint 2013. arXiv:1402.2522

[2] A.Nowak, K.Stempak, *Potential operators associated with Hankel and Hankel-Dunkl transforms*, preprint 2014. arXiv:1402.3399