Errata for "The Kendall and Mallows Kernels for Permutations", ICML 2015

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In Section 5 of the paper, we asserted that:

> Since $\kappa_M(\sigma)$ depends only on the destination of the ordered item pairs $\{(i,j)\}_{i<j}$ sent by permutation σ, the Fourier coefficient $\hat{\kappa}_M(\mu)$ is zero whenever $\mu \lhd (n-2,1,1)$ with respect to dominance order indexed by integer partition, regardless of k.

This is wrong! It is rather easy to verify that the Mallows kernel is indeed non-degenerate once we notice that the Mallows kernel corresponds to a Gaussian kernel of a Euclidean embedding of the permutation group and use the results from [1, Theorem 2.2]. Furthermore, see [2] for a detailed Fourier analysis on the Kendall and Mallows kernels.

References

[1] C. Andreas, and I. Steinwart. Universal kernels on non-standard input spaces. *NIPS*, 2010.

[2] H. Mania, A. Ramdas, M. J. Wainwright, M. I. Jordan and B. Recht. Universality of Mallows' and degeneracy of Kendall's kernels for rankings. *arXiv:1603.08035v1*, 2016.