

1154-41-1980 **Anna C Aboud*** (aaboud@westmont.edu), aaboud@westmont.edu. *Kaczmarz and Least Absolute Deviations.*

The Kaczmarz algorithm iteratively reconstructs vectors in a Hilbert space using inner products against a sequence $\{e_n\}$. Because of its low complexity and computational efficiency, the algorithm is particularly well suited to large data sets, leading to many applications in the realm of data science. In the case of an inconsistent system, variations of the algorithm will converge to a least squares solution. There are cases, however, where a least absolute deviations (LAD) solution is preferred. As currently defined, the algorithm only converges in the context of a Hilbert space, rendering the search for an LAD solution fruitless. To address this limitation, we develop a dualized version of the Kaczmarz algorithm which can be applied in a Banach space setting. We will discuss the construction, ramifications, and application of this dualized algorithm. (Received September 17, 2019)