Co-Occuring Directions Sketching for Approximate Matrix Multiply : Supplementary Material
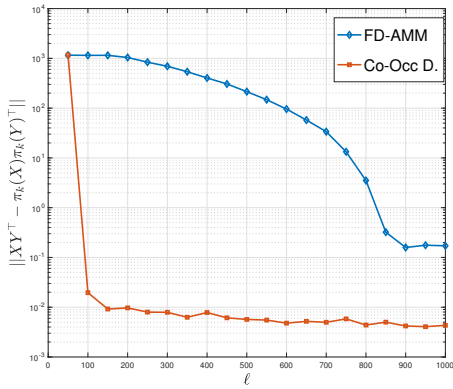
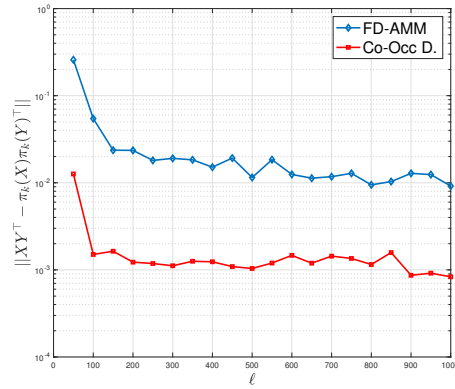**Youssef Mroueh**   **Etienne Marcheret**   **Vaibhava Goel**

IBM T.J Watson Research Center, NY, USA.
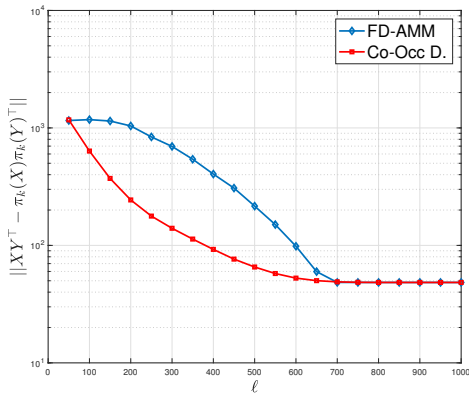
1   Low Rank product Approximation

(a) $(kx = 400, k_y = 40)$
error in log scale.

(b) $(k_x = 40, k_y = 40)$
error in log scale.

Figure 1: No noise : Low rank approximation of matrix product, after projection on left and right singular vectors of $B_X B_Y^\top$ for $k = \min(k_x, k_y) = 40$.
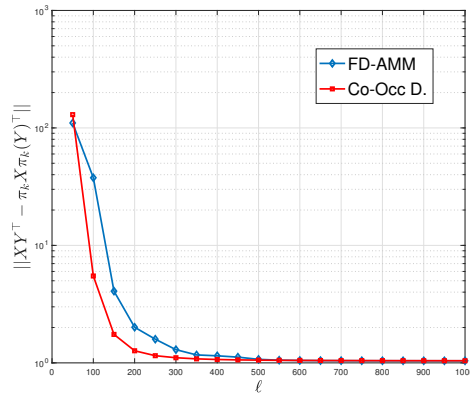

(a) $(kx = 400, k_y = 40)$
error in log scale.

(b) $(k_x = 40, k_y = 40)$
error in log scale.

Figure 2: Noisy : Low rank approximation of matrix product, after projection on left and right singular vectors of $B_X B_Y^\top$ for $k = min(k_x, k_y) = 40$.
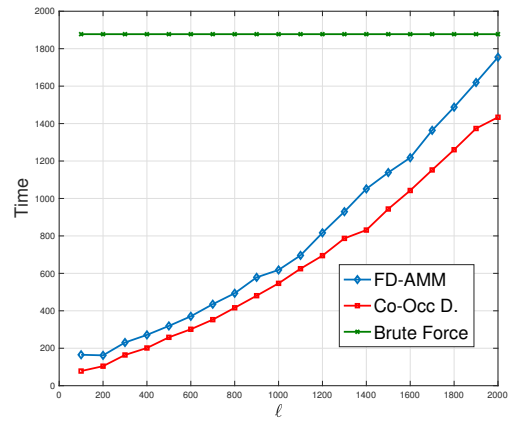
2 MS-Coco Timing Experiments

Figure 3: Timing of sketching on MS-COCO.