

**Table 6. Information about effect of variable  $\alpha$  on the single-molecule data sets**

$\alpha$	Substrate-free AK*		AK with AMP-PNP/AMP <sup>†</sup>	
	$T_{\text{avg}}$ , ms	No. of $\hat{x}$ measurements	$T_{\text{avg}}$ , ms	No. of $\hat{x}$ measurements
0.07	8.6	$7.47 \times 10^4$	6.9	$5.91 \times 10^4$
0.08	6.7	$9.52 \times 10^4$	5.5	$7.52 \times 10^4$
0.09	5.5	$1.17 \times 10^5$	4.4	$9.27 \times 10^4$
0.10	4.5	$1.41 \times 10^5$	3.7	$1.11 \times 10^5$
0.11	3.9	$1.65 \times 10^5$	3.2	$1.30 \times 10^5$
0.12	3.4	$1.90 \times 10^5$	2.7	$1.50 \times 10^5$
0.13	2.8	$2.32 \times 10^5$	2.4	$1.70 \times 10^5$
0.14	2.5	$2.60 \times 10^5$	2.2	$1.90 \times 10^5$
0.15	2.2	$2.88 \times 10^5$	1.9	$2.11 \times 10^5$

\*No. of molecules, 419 (645 s).

<sup>†</sup>No. of molecules, 344 (413 s).