

Table 1: Results

Problem Size	Method	MDE	RMSD	Time	Improv time
pdb1ba5 320	Classic	$2.632 \times 10^{-7}$		$3.5092 \times 10^{-4}$	
	Quaternion	$2.632 \times 10^{-7}$	$4.1595 \times 10^{-12}$	$2.3397 \times 10^{-4}$	49.987
pdb1d1n 594	Classic	$1.990 \times 10^{-6}$		$5.5386 \times 10^{-2}$	
	Quaternion	$1.990 \times 10^{-6}$	$1.3648 \times 10^{-12}$	$3.3341 \times 10^{-2}$	66.118
pdb1dp3 332	Classic	$3.490 \times 10^{-6}$		$9.1548 \times 10^{-3}$	
	Quaternion	$3.490 \times 10^{-6}$	$2.1817 \times 10^{-12}$	$5.2842 \times 10^{-3}$	73.249
pdb1du1 122	Classic	$6.874 \times 10^{-6}$		$1.4836 \times 10^{-4}$	
	Quaternion	$6.874 \times 10^{-6}$	$1.3307 \times 10^{-12}$	$9.5458 \times 10^{-5}$	55.417
pdb1fcl 338	Classic	$1.754 \times 10^{-6}$		$8.8635 \times 10^{-2}$	
	Quaternion	$1.754 \times 10^{-6}$	$8.3186 \times 10^{-13}$	$4.9507 \times 10^{-2}$	79.038