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**Table S1**

**S1 Table. Optimized RWD gradient parameters:** The top ten sum ranks are listed in ascending order, based on the ranks from the directionality and capture time error ( $\epsilon(k)$ ), with the corresponding parameters of the attractive ( $r_{1/2}^a$  and  $s^a$ ) and repulsive ( $r_{1/2}^r$  and  $s^r$ ) gradients (see Fig S2(A)).

Parameter Sum set (k)	Sum of ranks ( $R_s(k)$ )	$r_{1/2}^a$	$s^a$	$r_{1/2}^r$	$s^r$
482	22	10	1	0	2
487	34	10	1	1	2
377	36	8	1	3	2
497	37	10	1	3	2
362	42	8	1	0	2
372	43	8	1	2	2
506	52	10	1	5	1
267	55	6	1	5	2
363	56	8	1	0	3
492	56	10	1	2	2