

KiW 43 Abstract ($\omega\epsilon\beta/\text{kiw}$). Whether or not you like the formulas on this page, they describe the strongest truly computable knot invariant we know.

Observations. • Separates the Rolfsen table; does better than

Khovanov plus HOMFLY-PT on knots with up to 12 crossings (not tested beyond). • The degrees are bounded by the genus!

• ρ_1 vanishes for amphichiral knots. • Has a chance of detecting non-ribbonness ($\omega\epsilon\beta/\text{akt}$)!

knot diag	n'_k $(\rho'_1)^+$	Alexander's ω^+	genus / ribbon unknotting # / amphi?	$(\rho'_2)^+$	knot diag	n'_k $(\rho'_1)^+$	Alexander's ω^+	genus / ribbon unknotting # / amphi?	$(\rho'_2)^+$	knot diag	n'_k $(\rho'_1)^+$	Alexander's ω^+	genus / ribbon unknotting # / amphi?	$(\rho'_2)^+$
	0_1^a 0	1	0 / ✓ 0 / ✓			3_1^a T	$T-1$	1 / ✗ 1 / ✗			4_1^a 0	$3-T$	1 / ✗ 1 / ✓	
	5_1^a $2T^3+3T$	T^2-T+1	2 / ✗ 2 / ✗			5_2^a $5T-4$	$2T-3$	1 / ✗ 1 / ✗			6_1^a $T-4$	$5-2T$	1 / ✓ 1 / ✗	
	6_2^a T^3-4T^2+4T-4	$-T^2+3T-3$	2 / ✗ 1 / ✗			6_3^a 0	T^2-3T+5	2 / ✗ 1 / ✓			7_1^a $3T^5+5T^3+6T$	T^3-T^2+T-1	3 / ✗ 3 / ✗	
	7_2^a $14T-16$	$3T-5$	1 / ✗ 1 / ✗			7_3^a $-9T^3+8T^2-16T+12$	$2T^2-3T+3$	2 / ✗ 2 / ✗			7_4^a $32-24T$	$4T-7$	1 / ✗ 2 / ✗	
	7_5^a $9T^3-16T^2+29T-28$	$2T^2-4T+5$	2 / ✗ 2 / ✗			7_6^a $T^3-8T^2+19T-20$	$-T^2+5T-7$	2 / ✗ 1 / ✗			7_7^a $8-3T$	T^2-5T+9	2 / ✗ 1 / ✗	
	8_1^a $5T-16$	$7-3T$	1 / ✗ 1 / ✗			8_2^a $2T^5-8T^4+10T^3-12T^2+13T-12$	$-T^3+3T^2-3T+3$	3 / ✗ 2 / ✗			8_3^a 0	$9-4T$	1 / ✗ 2 / ✓	
	8_4^a $3T^3-8T^2+6T-4$	$-2T^2+5T-5$	2 / ✗ 2 / ✗			8_5^a $-2T^5+8T^4-13T^3+20T^2-22T+24$	$-T^3+3T^2-4T+5$	3 / ✗ 2 / ✗			8_6^a $5T^3-20T^2+28T-32$	$-2T^2+6T-7$	2 / ✗ 2 / ✗	
	8_8^a $-7T^5+4T^4-10T^3+12T^2-13T+12$	T^3-3T^2+5T-5	3 / ✗ 1 / ✗			8_8^a $-T^3+4T^2-12T+16$	$2T^2-6T+9$	2 / ✓ 2 / ✗			8_9^a 0	$-T^3+3T^2-5T+7$	3 / ✓ 1 / ✓	
	8_{10}^a $-7T^5+4T^4-11T^3+16T^2-21T+20$	T^3-3T^2+5T-5	3 / ✗ 2 / ✗			8_{11}^a $5T^3-24T^2+39T-44$	$-2T^2+7T-9$	2 / ✗ 1 / ✗			8_{12}^a 0	$T^2-7T+13$	2 / ✗ 2 / ✓	
	8_{13}^a $-7T^3+4T^2-14T+20$	$2T^2-7T+11$	2 / ✗ 1 / ✗			8_{14}^a $5T^3-28T^2+57T-68$	$-2T^2+8T-11$	2 / ✗ 1 / ✗			8_{15}^a $21T^3-64T^2+120T-140$	$3T^2-8T+11$	2 / ✗ 2 / ✗	
	8_{16}^a $T^5-6T^4+17T^3-28T^2+35T-36$	T^3-4T^2+8T-9	3 / ✗ 2 / ✗			8_{17}^a 0	$-T^3+4T^2-8T+11$	3 / ✗ 1 / ✓			8_{18}^a 0	$-T^3+5T^2-10T+13$	3 / ✗ 2 / ✓	
	8_{19}^a $-3T^5-4T^2-3T$	T^3-T^2+1	3 / ✗ 3 / ✗			8_{20}^a $4T-4$	T^2-2T+3	2 / ✓ 1 / ✗			8_{21}^a $T^3-8T^2+16T-20$	$-T^2+4T-5$	2 / ✗ 1 / ✗	

knot diag	n'_k $(\rho'_1)^+$	Alexander's ω^+	genus / ribbon unknotting # / amphi?	$(\rho'_2)^+$	knot diag	n'_k $(\rho'_1)^+$	Alexander's ω^+	genus / ribbon unknotting # / amphi?	$(\rho'_2)^+$
	9_1^a $4T^7+7T^5+9T^3+10T$	$T^4-T^3+T^2-T+1$	4 / ✗ 4 / ✗			9_2^a $30T-40$	$4T-7$	1 / ✗ 1 / ✗	
	9_3^a $-13T^5+12T^4-25T^3+20T^2-32T+24$	$2T^3-3T^2+3T-3$	3 / ✗ 3 / ✗			9_4^a $23T^3-28T^2+46T-44$	$3T^2-5T+5$	2 / ✗ 2 / ✗	

Video and more: <http://www.math.toronto.edu/~drorbn/Talks/CRM-1907>,
<http://www.math.toronto.edu/~drorbn/Talks/UCLA-191101>.