Application of general tool (condition (C2))

Model	Problem	Fitness bias θ
One-bit (q)	ONEMAX	$\theta > 1/2 - q/2(1 - q/2) - o(1)$
	LEADINGONES	$\theta > 1/2 - q(1 - q/2)$
Bit-wise (p)	ONEMAX	$\theta > \frac{9(1-2p)}{128\sqrt{2pn}+32}$
	LEADINGONES	$\theta > (1/2 - 3p/2)\,e^{-3np}$
Gaussian (σ)	ONEMAX	$\theta > 1/(6 + 48\sigma/\pi)$
	LEADINGONES	
-	DYNBV	$\theta > 1 + 1/(2n)$
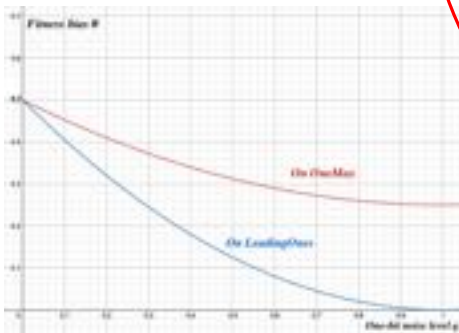
Pessimistically assume $x_1 = 1^{j+1}00^{n-(j+1)-1}$ and $x_2 = 1^j01^{n-j-1}$ s.t. $f(x_1) = j + 1$ and $f(x_2) = j$, then

$$\Pr(f^n(x_1) > f^n(x_2)) + \frac{1}{2}\Pr(f^n(x_1) = f^n(x_2))$$

$$\geq \frac{1}{2} + \theta > (1-q)^2 + (1-q)q\left(1 - \frac{1}{n}\right)$$

$$+ q(1-q)\frac{1-(j+1)}{n} + \frac{q^2}{2}$$

$$> \frac{1}{2} + \frac{1}{2} - q\left(1 - \frac{q}{2}\right)$$

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