

h	$f(k + h)$	$f(k - h)$	Δf	$\partial f / \partial Ki_h(fw)$	$\partial f / \partial Ki_h(cen)$
10^{-1}	—	—	—	—	—
10^{-2}	10.01499005	—	7.004056977	700.4056977	700.4056977
10^{-3}	6.841570115	10.85809808	3.830637045	3830.637045	-2008.263985
10^{-4}	2.999228958	3.023374209	-0.01170411236	-117.0411236	-120.7262545
10^{-5}	3.009782029	3.011859339	-0.00115104144	-115.104144	-103.8655112
10^{-6}	3.010614869	3.010898431	-0.0003182018506	-318.2018506	-141.78128
10^{-7}	3.010936466	3.010929663	3.395186554e-06	33.95186554	34.01416135
10^{-8}	3.010933411	3.010932736	3.401050126e-07	34.01050126	33.73512028
10^{-9}	3.010933105	3.010933037	3.401894988e-08	34.01894988	34.01644988
10^{-10}	3.010933074	3.010933073	3.407609306e-09	34.07609306	6.022242705
10^{-11}	3.010933071	3.01093307	3.422653272e-10	34.22653272	33.97264692
10^{-12}	3.010933071	3.010933071	3.135358639e-11	31.35358639	33.75810742
10^{-13}	3.010933071	3.010933071	4.618527782e-12	46.18527782	20.88773599
10^{-14}	3.010933071	3.010933071	-4.59188243e-13	-45.9188243	-303.9790641
10^{-15}	3.010933071	3.010933071	4.964029188e-12	4964.029188	2449.151992
10^{-16}	3.010933071	3.010933076	-1.199040867e-14	-119.9040867	-28003932.51
10^{-17}	3.010933071	3.010933071	-5.773159728e-15	-577.3159728	-288.6579864
10^{-18}	3.010933071	3.010933071	-5.773159728e-15	-5773.159728	-2502886.787
10^{-19}	3.010933071	3.010933071	0	0	0
10^{-20}	3.010933071	3.010933071	0	0	0
10^{-21}	3.010933071	3.010933071	0	0	0
10^{-22}	3.010933071	3.010933071	0	0	0

Table 1: Step size study for Ki_h , gains $Kph0.0544697_Kih0.0076355_Kpth1.6802_Kith2.01171_Kdth-1.64786_KpV2.05882$