

$h$	$f(k+h)$	$f(k-h)$	$\Delta f$	$\partial f / \partial Kp\_V(fw)$	$\partial f / \partial Kp\_V(cen)$
$10^{-1}$	3.01189494	3.00940147	0.0009618698185	0.009618698185	0.01246735312
$10^{-2}$	3.011097008	3.010531428	0.0001639373236	0.01639373236	0.02827897838
$10^{-3}$	3.01109119	3.010772728	0.0001581192724	0.1581192724	0.1592308569
$10^{-4}$	3.010948981	3.010917138	1.591018287e-05	0.1591018287	0.1592129483
$10^{-5}$	3.010934663	3.010931478	1.592020833e-06	0.1592020833	0.1592128697
$10^{-6}$	3.01093323	3.010932917	1.592122145e-07	0.1592122145	0.156411845
$10^{-7}$	3.010933092	3.010933055	2.152297141e-08	0.2152297141	0.1871977018
$10^{-8}$	3.010933078	3.010933069	7.209699504e-09	0.7209699504	0.4398919007
$10^{-9}$	3.010933071	3.01093307	1.583990716e-10	0.1583990716	0.1583244646
$10^{-10}$	3.010933071	3.010933071	2.039968194e-11	0.2039968194	0.1533395633
$10^{-11}$	3.010933071	3.010933076	1.012523398e-13	0.01012523398	-280.0360388
$10^{-12}$	3.010933071	3.010933071	4.982236845e-12	4.982236845	2.488009798
$10^{-13}$	3.010933071	3.010933071	6.217248938e-15	0.06217248938	0.05995204333
$10^{-14}$	3.010933071	3.010933071	5.000000414e-12	500.0000414	251.7763775
$10^{-15}$	3.010933071	3.010933076	4.994227254e-12	4994.227254	-2800382.592
$10^{-16}$	3.010933071	3.010933071	0	0	0
$10^{-17}$	3.010933071	3.010933071	0	0	0
$10^{-18}$	3.010933071	3.010933071	0	0	0
$10^{-19}$	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  $Kp\_V$ , gains  $Kph0.0544697\_Kih0.0076355\_Kpth1.6802\_Kith2.01171\_Kdth-1.64786\_KpV2.05882$