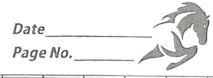
ア



3) $f_2(z) = 1 z^{p-1}(1-z)^{q-1}; 0 \le z \le 1$ Now, $z = \int z^{p-1}(1-z)^{q-1}dz$ $\int B(p,q)$ The cract constitued solution of the above integral :. $u^{(i)}B(p,q) = (z^{p-1}(1-z)^{q-1}dz$ Thus we use the inbuilt inverse function of the incomplete Beta distribution. Q.6. According to the perturbation theory, Laplace approximation of the vector pu Since the three parameters are independent, their mutual covariance For a joy Nomual distribution (u, o) = e u-62 = # u. Taking Taylor deries expansion of log (p(y)) & about $\frac{\log (p(u)) = \log (p(u_0)) + \log (p(u))}{\log (p(u))} \frac{(u-u_0) + 1}{2 \log (p(u))} \frac{\log (p(u))}{\log (p(u))} \frac{\log (p(u))}{\log$ $\frac{1}{2} \log (p(u)) = \log (p(u)) + 1 d^2 \log (p(u))$

DELTA Notebook



$\Rightarrow p(\mathbf{a}) \propto \exp \left[\frac{d^2 \log p(\mathbf{a})}{(u-y_0)^2} \right]$
du ² lu ₀ 2
For Tog Normal,
$p(u) = \left(\frac{u}{u} \right)^2$
$u\sqrt{2\pi6^2}$ 26^2
[log (p(u)) = - logu - 1 log (2102) - (lnu-u)2
$\frac{1}{2}$
d (og (p(u)) = - 1 - (Aux-1)/ 1)] []
$\frac{du^{2}}{du^{2}} \left[u + \frac{1}{4} \frac{uu - u}{6^{2}} \right]$
(u-y) of log (p(u)) = -
$\frac{2}{2} \frac{du^2}{du^2}$
d log (plui) = -+ (+++) 1 (1+hu-u) -1 []
du2 4 62 u2 62 u u02
1 1 + lua-u -1
$\frac{1}{2} \frac{1}{2} \frac{1}$
For up = et = 2: d2 log p(u) = 1 [2-1-1+ 1-1]
du² luo e2mof 2
= -
@ 2(u-e2) 2
Var [u] = - (- 1) = = 2e 2(11-e2)
Caluer) 2
$- p(u) = \mathcal{N}(u, s)$
where, $U = [e^{u_c - \varepsilon_c^2} e^{u_k - \varepsilon_k^2} e^{u_a - \varepsilon_c^2}]^T$
$\sum_{n=1}^{\infty} = \left[\sigma_{n}^{2} e^{2(n-e^{2})} \right] = 0$
$0 = \frac{2e^{2}(u_{k}-\epsilon^{2})}{2e^{2}(u_{k}-\epsilon^{2})}$
0 52,2(14,-6,2)
V 0 P

For the given system:

Let y: y = X y = X

al [y] - [-cy - ky - xy3 + Asin(at) Asin(at)]

Initial Cond's y (0) = 0.1; y2(0) = 0

 $\frac{d}{dt}\left(\frac{\partial y_1}{\partial y_2}\right) = \frac{\partial}{\partial u_1}\left(\frac{\partial u_2}{\partial u_2}\right) = \frac{\partial}{\partial u_2}\left(\frac{\partial u_2}{\partial u_2}\right) = \frac$

=) $d\left(\frac{\partial y}{\partial u}\right) - \frac{\partial y}{\partial u}$ = 3 eg/s: j = 1, 2, 3

d(dy) = 2 (dy) - 2 (-cy-ky-xy3+A, A, sin (Pt) sin (20t))

= -y2 - cdy - kdy - 3xy2dy
dc dc dc

Ay d (dy) -- cdy - y, - kdy, - 3 xy 2 dy,

dk dk dk dk

 $\frac{d\left(\frac{\partial y_2}{\partial x}\right) = -c\frac{\partial y}{\partial x} - k\frac{\partial y}{\partial x} - y^3 - 3\alpha y^2 \frac{\partial y}{\partial x}}{\partial x}$

For initial value: $d\left(\frac{\partial y(0)}{\partial u}\right) = \partial d\left(\frac{\partial y(0)}{\partial u}\right) = 0$ j = 1, 2, 3