

-Revision Materials For a PDE Derivation (Proof) /4 = u((,x,), == 0,u((,x,), , == 0;u((,x)) on tel writing the U(+, XI) distrim is differential form dy = du(+, x, ) = - F(s, x, is, Z., r) - Z, o(s, xs) dus Solution and receivence and uniquenes of the Solution and Circhitz propares is that a constant C which depends on both =) Marofine / Ft (t, x, y, 6(t, x), Z) - Ft (t, x', y', o(t, x'), Z') = Ct (1+1212)+ |4+41 + |2-21/2 a (taxe) desinten is de Household for the western is definition we have determined from the determined from the determined from we have determined from the determined from Yt = g(x,) - SFE (s, 1s, 7s, 2, 1) ds =) Moretine  $|F_t(t,x,y,\delta(t,x)^T,z)-F_t(t,x',y',\sigma(t,x')^T,z')\leq C_{f,x}(|x-x'|)$ (1+1212)+ |y+y'|+ |z-z'|2) =) Assuming the lipschitz Convergence (riterion is Salsalsed, that for some ox, The solution That our generator tunction on x, ij and >,

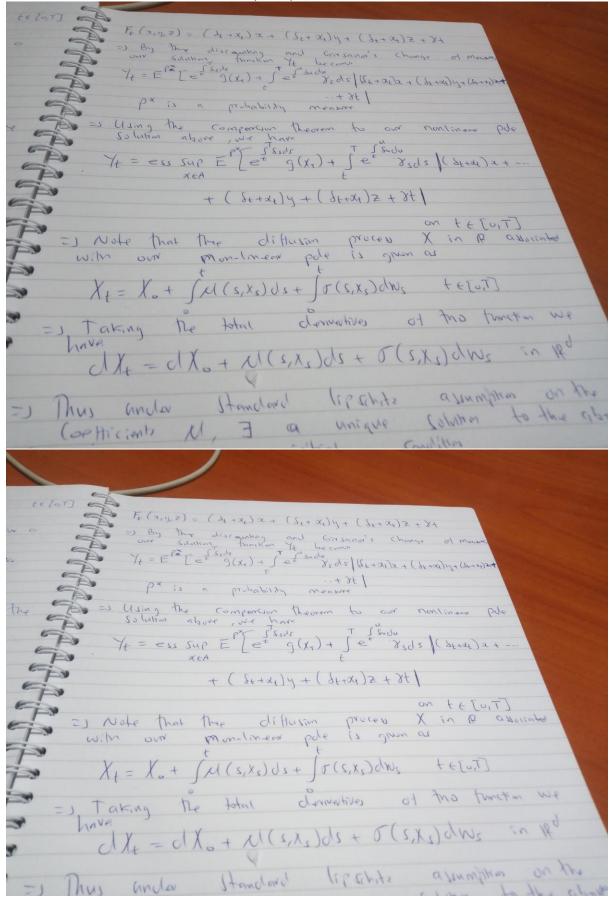
-Revision Materials For a PDE Derivation (Proof) =) Martine | Ft (t, z, y, \( \tau\_{t}, \times) - Ft (t, \times', y', \( \tau\_{t}, \times'), \( \times' \) = Cf, \( \tau\_{t} \) (1+1212)+ |4+41 + |2-21/2 =) Assuming the lipschitz Convergence (riterion is Salsalied, we have that for some x, the solution U(t, Xt) is bounded =) Note that un generator function Ft does to depend on x, y and & thus by lipschitz properties the tuntim veduces to  $F_{t}(x,y,z) = (\delta_{t} + x_{t})x + (\delta_{t} + x_{t})y + (\delta_{t} + x_{t})z + 8t$ de tunking and Grasanoi's Change of mouse gray 12 of 2 (2+ 24) x + (2+24) x + (2+24) x + (2+24) x + Using the comparison theorem solution above , we have

-Revision Materials For a PDE Derivation (Proof)  $F_{t}(x,y,z) = (\delta_{t} + x_{t}) x + (\delta_{t} + x_{t}) y + (\delta_{t} + x_{t}) z + yt$ px is a probability measure Using the comportion theorem to our nonlinear pole solution above, we have

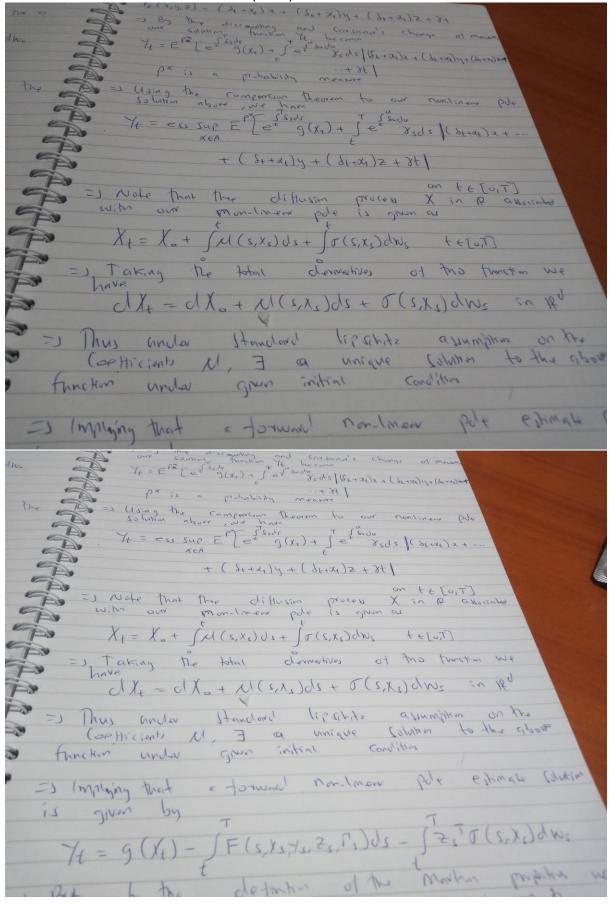
Yt = ess sup E [et g(Xx) + Je '8sds (Stade) 2+. => Using the + ( 8++2+)4+ (8+2+ 8+) on teloits X in R ayou that the diffusion process Fe (2,9,2) = ( Se + xe) x + (Se + xe) y + (Se + xe) Z + X+ The Experiment and Gresavis's change of mouse The Experiment thinkon It becomes

The Experiment of mouse of the said of the Px is a probability measure Solution above, we have I ("Ill Yt = ess sup Ept stads (Xt) + Jet ysds (Stade) 2 + ( S++x+)y+ ( S++x+)z+ 8+) on te [UIT] with our mon-linear pole is given as  $X_t = X_0 + \int \mathcal{U}(s_1 x_s) ds + \int \tau(s_1 x_s) dw_s + \epsilon_{[0,1]}$ 

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Xt = Xo + SM(s,xs)ds + ST(s,xs)dNs + EZO,T) = ) Taking the total derivatives of the function we have dx+ = dx0+ M(s,x,)ds+ T(s,x,)dws in 12d Thus and standard lipschitz assumption on the Coefficients M. I a unique Column to the above function under green initial condition I Implaying that a forward non-linear pole estimate addition The g(Xt) - JF(s,Xs,Zs,Ts)ds - JZsTJ(s,Xs)dws

=) But by the detection of the Months properties up

detine the stution I restricted on the

dornar sand to as fillows 1/5- 1/+ = U(S,X5)-U(+,X+)= = SF(s, Xu, Tu, Zo, Tu) ds - SZu T (s, Xu,) dwa telon) - Thus from the Ito's formula we have that too a nonlinear pole in the formula x, y, z direction 

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