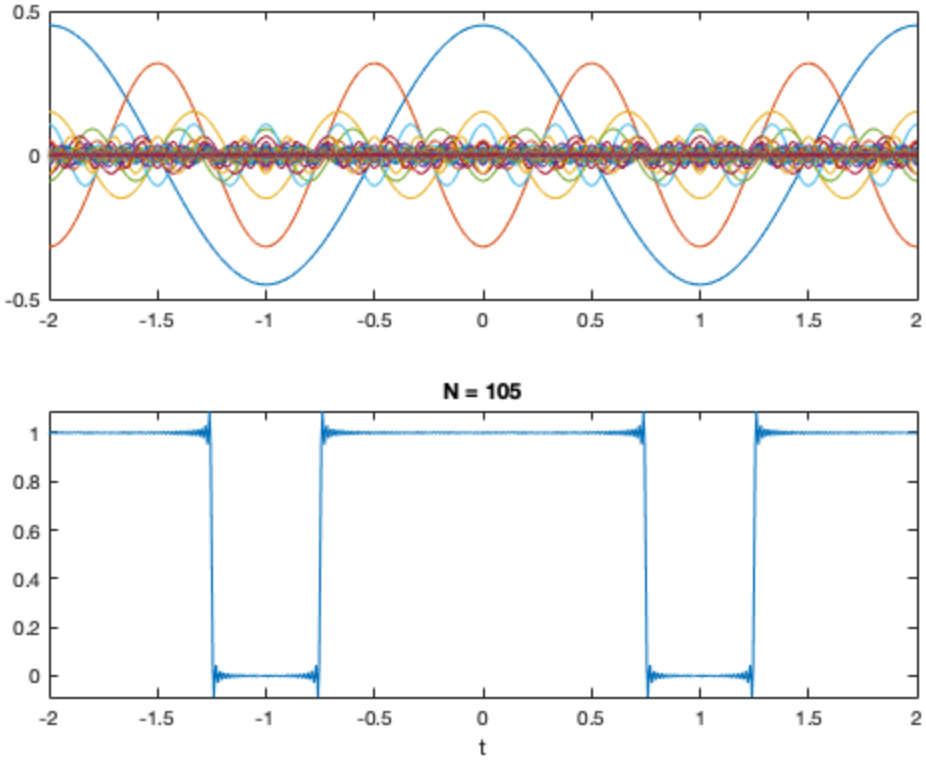
```
% fs1.m : FOURIER SERIES - PERIODIC RECTANGULAR PULSE SIGNAL
% Periodic Pulse Signal Convergence (105)
% Longest convergence due to the instantaneous spike characteristics
 of a
%   pulse signal which needs a cos(infinity) for the vertical line
%   resulting in the Gibb's Phenomena => continuously differentiable
%   periodic function has a jump discontinuity resulting in "ears"

T  = 2;                % T = period
Tp = 1.5;              % Tp = width of pulse
t = -T:0.005:T;        % t = time axis
wo = 2*pi/T;           % fundamental frequency
c0 = Tp/T;             % from the formula for c(k)
x = c0*ones(size(t));  % DC component of x(t)
figure(1)
clf

for k = 1:105
   figure(1)
   subplot(2,1,1)
   ck = Tp/T*sinc(k*wo*Tp/2/pi);    % the formula for c(k)
   xk = 2*ck*cos(k*wo*t);           % Plotted y value
   plot(t,xk);                      % Aggregate plot of all cos
 functions
   hold on
   x = x + xk;                      % Next Iteration by adding next xk
   subplot(2,1,2)
   hold off
   plot(t,x)                        % Plot of mimicked pulse wave
   xlabel('t')
   title(['N = ',num2str(k)])
   pause(0.2)
end
```



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