

LAMPIRAN

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clc;
clear all;
close all;
clc;

%%%%% Inisialisasi Masukan %%%%%
M = 4;
Fs = 2500;
t = (0:1/Fs:1-1/Fs);
SNR = 40;
noiseVar = 10.^(-SNR/10);
phase_offset = 0.6*pi;
f_model_offset = 25;
L0 = 32;
N = 16;

%%%%% Membangkitkan data M-ary-PSK %%%%%
konstelasi = exp(j*2*pi*(0:M-1)/M);
ak = konstelasi(1 + round(rand(1,Fs)*(M-1)));

%%%%% Membangkitkan vektor frekuensi carrier (yang akan
diestimasi) %%%%%
fce = -10*atan(0.005*((Fs+1)/2-(0:F_s-1))) + f_model_offset;

%%%%% Membangkitkan y(k) (filter output yang diterima) %%%%%
carrier = exp(j*2*pi*fce.*t + phase_offset);
yk = ak.*carrier/max(ak.*carrier) + sqrt(noiseVar/2)*(randn(1,Fs)
+ i*randn(1,Fs));

%%%%% Membangkitkan z(k) %%%%%
zk = conj(ak).*yk;
%%%%% %%%%%

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%%%%% Estimasi Frekuensi%%%%%%%%
%%%%% Kasus sederhana : dengan dua sampel %%%%
%%%%% %%%%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

f_est = Fs/(2*pi)*angle(zk(2:end).*conj(zk(1:end-1)));

plot(f_est),grid;

pjpg_fce=length(fce);

for k=2:pjpg_fce

    salah_frekw_est(k-1) = abs(fce(k)) - abs(f_est(k-1))

    %     if (sign(fce(k))==sign(f_est(k-1)))
    %         salah_frekw_est(k-1) = abs(fce(k)) - abs(f_est(k-1))
    %     else
    %         salah_frekw_est(k-1) = fce(k) + f_est(k-1)
    %     end;
end;

figure;
plot(salah_frekw_est),grid;

var_cramer=var(salah_frekw_est)

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