Examples for using the code

1 generate VSASL signal

%----code start----

CBF = 60;

cbf = CBF/6000;

T1\_app = 1600;

T1\_artery = 1850;

T\_tau = 1800; % PCASL labeling duration

T2\_factor=1; % no crusher effect; crusher effect 0.78

alpha\_BS1=1; % no background suppression effect; BS effect 0.95

lambda = 0.9;

alpha\_VSASL = 0.56;

M0\_b=1;

True\_ATT = 1600;

myPLDs = 500:500:3000; % this is Matlab reference data, X

% [cbf;True\_ATT] % this fitted beta or [a;b]

true\_vsasl\_curve = fun\_VSASL\_1comp\_vect\_pep([cbf;True\_ATT], myPLDs, T1\_artery, T2\_factor, alpha\_BS1,alpha\_VSASL);

true\_vsasl\_curve= [ 0.0047 0.0072 0.0083 0.0068 0.0052 0.0039]; % this is Matlab reference data, Y

figure; plot(myPLDs, true\_vsasl\_curve);

[beta, conintval] = fit\_VSASL\_vect\_pep(myPLDs', true\_vsasl\_curve,T1\_artery, T2\_factor, alpha\_BS1,alpha\_VSASL);

fit\_cbf = beta(1)\*6000;

fit\_ATT = beta(2);

fitted\_vsasl\_curve = fun\_VSASL\_1comp\_vect\_pep(beta, myPLDs, T1\_artery, T2\_factor, alpha\_BS1,alpha\_VSASL);

figure; plot(myPLDs, fitted\_vsasl\_curve, ‘r’);