%% DataSelection\_20200606\_121421\_10003113

% 2008/12/20 ~ 12/31

cd('C:\Users\user\Google ¶³ºÝµwºÐ\¬v¬yÆ[´ú¤ÀªR\_1082\coding')

clear;clc;clf

cd('C:\Users\user\Google ¶³ºÝµwºÐ\¬v¬yÆ[´ú¤ÀªR\_1082\coding\DataSelection\_20200606\_121421\_10003113')

argo = dir('argo-\*');

for i = [7,10]

ds{i} = datastore(argo(i).name);

argo\_profiles{i} = read(ds{i});

% argo\_profiles\_cell{i} = table2cell(argo\_profiles{i}(:,:));

% argo\_profiles\_array{i} = cell2array(argo\_profiles\_ds{i});

eval(['xlon\_' argo(i).name(15:end-4) '= table2array(argo\_profiles{i}(:,5));']);

eval(['ylat\_' argo(i).name(15:end-4) '= table2array(argo\_profiles{i}(:,4));']);

eval(['p\_' argo(i).name(15:end-4) '= table2array(argo\_profiles{i}(:,6));']);

eval(['t\_' argo(i).name(15:end-4) '= table2array(argo\_profiles{i}(:,7));']);

eval(['s\_' argo(i).name(15:end-4) '= table2array(argo\_profiles{i}(:,8));']);

end

for i = [7,10]

eval(['id\_ylat\_' argo(i).name(15:end-4) '= unique(table2array(argo\_profiles{i}(:,4)));']);

for j = 1:length(eval(['id\_ylat\_' argo(i).name(15:end-4)]))

eval(['id\_row\_' argo(i).name(15:end-4) '\_' num2str(j) '= find(ylat\_' argo(i).name(15:end-4) '== id\_ylat\_' argo(i).name(15:end-4) '(j));']);

end

end

cd('C:\Users\user\Google ¶³ºÝµwºÐ\¬v¬yÆ[´ú¤ÀªR\_1082\coding')

% eval(['plot(xlon\_' argo(2).name(15:end-4) '(1,1),ylat\_' argo(2).name(15:end-4) '(1,1),''.'');']);

% for i=1:4

% eval(['plot(xlon\_' argo(i).name(15:end-4) '(1,1),ylat\_' argo(i).name(15:end-4) '(1,1),''.'',''MarkerSize'',10);hold on;']);

% end

% hold off;

%% Plot Argo locations

figure(1)

LATLIM = [17.5:1.5:30];

LONGLIM = [115:1.5:130];

m\_proj('miller','lon',[LONGLIM(1) LONGLIM(end)],'lat',[LATLIM(1) LATLIM(end)]); % Ã¸»s®ü­±(¥Õ¦â)

for i=[7,10]

eval(['id\_xlon\_' argo(i).name(15:end-4) '= unique(table2array(argo\_profiles{i}(:,5)));']);

for j = 1:length(eval(['id\_ylat\_' argo(i).name(15:end-4)]))

eval(['m\_plot(xlon\_' argo(i).name(15:end-4) '(j,1),id\_ylat\_' argo(i).name(15:end-4) '(j,1),''.'',''MarkerSize'',12);hold on;']);

end

end

hold off;

m\_gshhs\_h('patch',[0.7 0.7 0.7],'edgecolor','k'); %Ã¸»s³°¦a

m\_grid('linewi',1,'linestyle','none','tickdir','out',...

'xtick',LONGLIM,'ytick',LATLIM,...

'XaxisLocation','bottom','YaxisLocation','left','box','fancy');

title({'Location of Profiles';'SCS and Kuroshio';'2008/12/20 ~ 2008/12/31'},'Interpreter','none')

print('W13\_hw01\_argo\_profiles','-dpng')

%% T-P diagram (·Å«×¡B²`«×) Plot temperature profiles

figure(2)

k = 1;

for i = [7,10]

sp\_tp(k) = subplot(1,2,k);

for j = 1:3

eval(['t\_' argo(i).name(15:end-4) '\_' num2str(j) '= t\_' argo(i).name(15:end-4) '(find(ylat\_' argo(i).name(15:end-4) '== id\_ylat\_' argo(i).name(15:end-4) '(j)),1);']);

eval(['s\_' argo(i).name(15:end-4) '\_' num2str(j) '= s\_' argo(i).name(15:end-4) '(find(ylat\_' argo(i).name(15:end-4) '== id\_ylat\_' argo(i).name(15:end-4) '(j)),1);']);

eval(['p\_' argo(i).name(15:end-4) '\_' num2str(j) '= p\_' argo(i).name(15:end-4) '(find(ylat\_' argo(i).name(15:end-4) '== id\_ylat\_' argo(i).name(15:end-4) '(j)),1);']);

eval(['tp\_profiles\_' argo(i).name(end-10:end-5) '= plot(t\_' argo(i).name(end-10:end-4) '\_' num2str(j) ',p\_' argo(i).name(end-10:end-4) '\_' num2str(j) ',''.-'');']);

hold on;

end

hold off;

set(gca,'ydir','reverse');

xlabel('Temperature(^{\circ}C)');ylabel('Depth(m)');

k = k + 1;

% eval(['p\_' argo(i).name(15:end-4) '= table2array(argo\_profiles{i}(:,6));']);

% eval(['t\_' argo(i).name(15:end-4) '= table2array(argo\_profiles{i}(:,7));']);

end

title(sp\_tp(1),{'Temperature v.s Pressure';'SCS'},'Interpreter','none');

title(sp\_tp(2),{'Temperature v.s Pressure';'Kuroshio'},'Interpreter','none');

print('W13\_hw02\_argo\_profiles','-dpng')

%% T-S diagram (·Å«×¡B±K«×)

figure(3)

k = 1;

for i = [7,10]

sb\_ts(k) = subplot(1,2,k);

for j = 1:3

eval(['s\_' argo(i).name(15:end-4) '\_' num2str(j) '= s\_' argo(i).name(15:end-4) '(find(ylat\_' argo(i).name(15:end-4) '== id\_ylat\_' argo(i).name(15:end-4) '(j)),1);']);

eval(['ts\_' argo(i).name(end-10:end-5) '= plot(s\_' argo(i).name(end-10:end-4) '\_' num2str(j) ',t\_' argo(i).name(end-10:end-4) '\_' num2str(j) ',''.'');']);

hold on;

end

hold off;

% set(gca,'ylim',[,]);

xlabel('Salinity(psu)');ylabel('Temperature(^{\circ}C)');

k = k + 1;

end

title(sb\_ts(1),{'T-S diagram';'SCS'},'Interpreter','none');

title(sb\_ts(2),{'T-S diagram';'Kuroshio'},'Interpreter','none');

print('W13\_hw03\_argo\_profiles','-dpng')

%% Downwelling from section

figure(4)

k = 1;

for i = [7,10]

sb\_section(k) = subplot(1,2,k);

eval(['Tall\_' argo(i).name(15:end-4) '= [];']);

eval(['Pall\_' argo(i).name(15:end-4) '= [];']);

eval(['Yall\_' argo(i).name(15:end-4) '= [];']);

for j = 1:3

eval(['ylat\_' argo(i).name(15:end-4) '\_' num2str(j) '= ylat\_' argo(i).name(15:end-4) '(find(ylat\_' argo(i).name(15:end-4) '== id\_ylat\_' argo(i).name(15:end-4) '(j)),1);']);

eval(['Tall\_' argo(i).name(15:end-4) '= [Tall\_' argo(i).name(15:end-4) ' t\_' argo(i).name(15:end-4) '\_' num2str(j) '(1:51)];']);

eval(['Pall\_' argo(i).name(15:end-4) '= [Pall\_' argo(i).name(15:end-4) ' p\_' argo(i).name(15:end-4) '\_' num2str(j) '(1:51)];']);

eval(['Yall\_' argo(i).name(15:end-4) '= [Yall\_' argo(i).name(15:end-4) ' ylat\_' argo(i).name(15:end-4) '\_' num2str(j) '(1:51)];']);

% hold on;

end

eval(['contourf(Yall\_' argo(i).name(15:end-4) ...

',Pall\_' argo(i).name(15:end-4) ...

',Tall\_' argo(i).name(15:end-4) ',''linecolor'',''none'');']);

cb = colorbar;

% caxis([0 32]);

cb.Label.String = 'Temperature(^{\circ}C)';

set(gca,'ydir','reverse')

xlabel('Latitude(^{\circ}N)');ylabel('Depth(m)');

k = k+1;

end

title(sb\_section(1),{'Temperature section';'SCS'},'Interpreter','none');

title(sb\_section(2),{'Temperature section';'Kuroshio'},'Interpreter','none');

print('W13\_hw04\_argo\_profiles','-dpng')