```
% publish('plot_seasonal_TS.m', 'doc')

    % Set path
  %  in_path = "G:\Shared drives\Ryoko and Hilary\SoilMoistureSignature\GLDAS\0_data\";
   % out_path = "G:\Shared drives\Ryoko and Hilary\SoilMoistureSignature\GLDAS\2_out\";

    % Site information
    site = ["Oznet";"GLDAS"];
    depth = [3,4,15];
    nstation = 38;

    % read the format for the plots
    sig_abb = ["seasontrans_sdate_wet2dry_p"; "seasontrans_sdate_wet2dry_l"; ...
        "seasontrans_edate_wet2dry_p"; "seasontrans_edate_wet2dry_l"; ...
        "seasontrans_sdate_dry2wet_p"; "seasontrans_sdate_dry2wet_l"; ...
        "seasontrans_edate_dry2wet_p"; "seasontrans_edate_dry2wet_l"; ...
        "seasontrans_duration_wet2dry_p"; "seasontrans_duration_wet2dry_l"; ...
        "seasontrans_duration_dry2wet_p"; "seasontrans_duration_dry2wet_l"];

    sig_abb2 = ["Wet end (p)"; "Wet end (l)"; ...
        "Dry start (p)"; "Dry start (l)"; ...
        "Dry end (p)"; "Dry end (l)"; ...
        "Wet start (p)"; "Wet start (l)"; ...
        "Wet to dry (p)"; "Wet to dry (l)"; ...
        "Dry to wet (p)"; "Dry to wet (l)"];

    % Initialize the struct
    sig.network = [];sig.depth = [];sig.station = []; sig.type = []; sig.value = [];

    for s = 1:size(sig_abb,1)
        for i = 1:size(site,1)
            % read the signature data in a struct format
            fn = sprintf('%s_%s.txt', sig_abb(s), site(i,:));
            fid = fopen(fullfile('G:\Shared drives\Ryoko and
Hilary\SoilMoistureSignature\GLDAS\2_out',fn),'r')
            if s <= 8
                sig0 = textscan(fid, '%d %d %s \n','HeaderLines',0, 'Delimiter',',');
            else
                sig0 = textscan(fid, '%d %d %f \n','HeaderLines',0, 'Delimiter',',');
            end
            fclose(fid);

            sig.network = [sig.network; repelem(string(site(i,:)),1,length(sig0{1}))'];
            sig.depth = [sig.depth; sig0{1}];
            sig.station = [sig.station; sig0{2}];
            sig.type = [sig.type; repelem(sig_abb2(s),1,length(sig0{1}))'];
            sig.value = [sig.value; sig0{3}];
```

```
            clear sig0
            clear fn
        end
    end

    % loop for the depth
    for k = 1:size(depth,2)
    % loop for the station
        for n = 1:nstation
            statement = sprintf('Currently processing the data at depth %d cm, station %d', depth(k),
n);
            disp(statement)
```

```
Currently processing the data at depth 3 cm, station 1
Currently processing the data at depth 3 cm, station 2
Currently processing the data at depth 3 cm, station 3
Currently processing the data at depth 3 cm, station 4
Currently processing the data at depth 3 cm, station 5
Currently processing the data at depth 3 cm, station 6
Currently processing the data at depth 3 cm, station 7
Currently processing the data at depth 3 cm, station 8
Currently processing the data at depth 3 cm, station 9
Currently processing the data at depth 3 cm, station 10
Currently processing the data at depth 3 cm, station 11
Currently processing the data at depth 3 cm, station 12
Currently processing the data at depth 3 cm, station 13
Currently processing the data at depth 3 cm, station 14
Currently processing the data at depth 3 cm, station 15
Currently processing the data at depth 3 cm, station 16
Currently processing the data at depth 3 cm, station 17
Currently processing the data at depth 3 cm, station 18
Currently processing the data at depth 3 cm, station 19
Currently processing the data at depth 3 cm, station 20
Currently processing the data at depth 3 cm, station 21
Currently processing the data at depth 3 cm, station 22
Currently processing the data at depth 3 cm, station 23
Currently processing the data at depth 3 cm, station 24
Currently processing the data at depth 3 cm, station 25
Currently processing the data at depth 3 cm, station 26
Currently processing the data at depth 3 cm, station 27
Currently processing the data at depth 3 cm, station 28
Currently processing the data at depth 3 cm, station 29
Currently processing the data at depth 3 cm, station 30
Currently processing the data at depth 3 cm, station 31
Currently processing the data at depth 3 cm, station 32
Currently processing the data at depth 3 cm, station 33
Currently processing the data at depth 3 cm, station 34
Currently processing the data at depth 3 cm, station 35
Currently processing the data at depth 3 cm, station 36
Currently processing the data at depth 3 cm, station 37
Currently processing the data at depth 3 cm, station 38
Currently processing the data at depth 4 cm, station 1
Currently processing the data at depth 4 cm, station 2
Currently processing the data at depth 4 cm, station 3
```

```
Currently processing the data at depth 4 cm, station 4
Currently processing the data at depth 4 cm, station 5
Currently processing the data at depth 4 cm, station 6
Currently processing the data at depth 4 cm, station 7
Currently processing the data at depth 4 cm, station 8
Currently processing the data at depth 4 cm, station 9
Currently processing the data at depth 4 cm, station 10
Currently processing the data at depth 4 cm, station 11
Currently processing the data at depth 4 cm, station 12
Currently processing the data at depth 4 cm, station 13
Currently processing the data at depth 4 cm, station 14
Currently processing the data at depth 4 cm, station 15
Currently processing the data at depth 4 cm, station 16
Currently processing the data at depth 4 cm, station 17
Currently processing the data at depth 4 cm, station 18
Currently processing the data at depth 4 cm, station 19
Currently processing the data at depth 4 cm, station 20
Currently processing the data at depth 4 cm, station 21
Currently processing the data at depth 4 cm, station 22
Currently processing the data at depth 4 cm, station 23
Currently processing the data at depth 4 cm, station 24
Currently processing the data at depth 4 cm, station 25
Currently processing the data at depth 4 cm, station 26
Currently processing the data at depth 4 cm, station 27
Currently processing the data at depth 4 cm, station 28
Currently processing the data at depth 4 cm, station 29
Currently processing the data at depth 4 cm, station 30
Currently processing the data at depth 4 cm, station 31
Currently processing the data at depth 4 cm, station 32
Currently processing the data at depth 4 cm, station 33
Currently processing the data at depth 4 cm, station 34
Currently processing the data at depth 4 cm, station 35
Currently processing the data at depth 4 cm, station 36
Currently processing the data at depth 4 cm, station 37
Currently processing the data at depth 4 cm, station 38
Currently processing the data at depth 15 cm, station 1
Currently processing the data at depth 15 cm, station 2
Currently processing the data at depth 15 cm, station 3
Currently processing the data at depth 15 cm, station 4
Currently processing the data at depth 15 cm, station 5
Currently processing the data at depth 15 cm, station 6
Currently processing the data at depth 15 cm, station 7
Currently processing the data at depth 15 cm, station 8
Currently processing the data at depth 15 cm, station 9
Currently processing the data at depth 15 cm, station 10
Currently processing the data at depth 15 cm, station 11
Currently processing the data at depth 15 cm, station 12
Currently processing the data at depth 15 cm, station 13
Currently processing the data at depth 15 cm, station 14
Currently processing the data at depth 15 cm, station 15
Currently processing the data at depth 15 cm, station 16
Currently processing the data at depth 15 cm, station 17
Currently processing the data at depth 15 cm, station 18
Currently processing the data at depth 15 cm, station 19
```

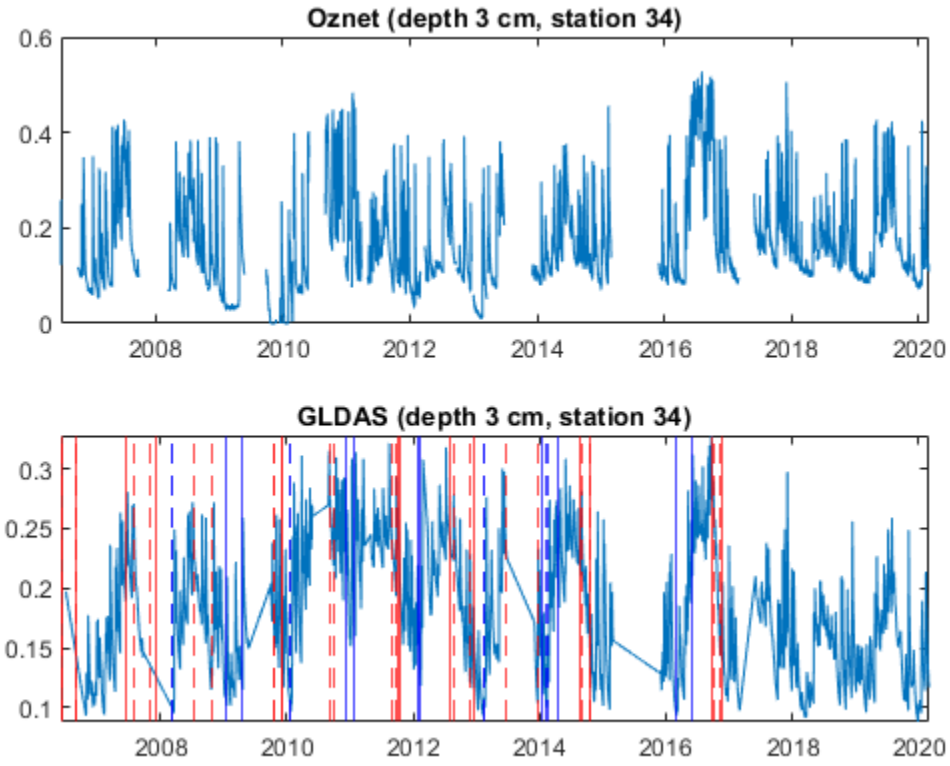
```
Currently processing the data at depth 15 cm, station 20
Currently processing the data at depth 15 cm, station 21
Currently processing the data at depth 15 cm, station 22
Currently processing the data at depth 15 cm, station 23
Currently processing the data at depth 15 cm, station 24
Currently processing the data at depth 15 cm, station 25
Currently processing the data at depth 15 cm, station 26
Currently processing the data at depth 15 cm, station 27
Currently processing the data at depth 15 cm, station 28
Currently processing the data at depth 15 cm, station 29
Currently processing the data at depth 15 cm, station 30
Currently processing the data at depth 15 cm, station 31
Currently processing the data at depth 15 cm, station 32
Currently processing the data at depth 15 cm, station 33
Currently processing the data at depth 15 cm, station 34
Currently processing the data at depth 15 cm, station 35
Currently processing the data at depth 15 cm, station 36
Currently processing the data at depth 15 cm, station 37
Currently processing the data at depth 15 cm, station 38
```

read the time series of data

Oznet

```
            fn0 = sprintf('sm_d%02d_s%02d.csv', depth(k), n);
            fn = fullfile('G:\Shared drives\Ryoko and Hilary\SoilMoistureSignature\GLDAS\0_data\',
"Oznet", fn0);

            if exist(fn, 'file') == 2
                fid = fopen(fn, 'r');
                smtt0 =
textscan(fid,'%q %f','HeaderLines',1,'DateLocale','en_US','Delimiter',',');
                smtt_oz = timetable(datetime(smtt0{1}),smtt0{2});
                fclose(fid);
                if isempty(smtt_oz)
                    continue
                end
                sm_oz = smtt_oz.Var1;
                clear smtt0 smtt1 fn0 fn
            end

            % GLDAS
            fn0 = sprintf('depth_%dcm.csv', depth(k));
            fn = fullfile('G:\Shared drives\Ryoko and Hilary\SoilMoistureSignature\GLDAS\0_data\',
"GLDAS", fn0);
            if exist(fn, 'file') == 2
                fid = fopen(fn, 'r');
                smtt0 =
textscan(fid,'%d %q %f','HeaderLines',1,'DateLocale','en_US','Delimiter',',');
                n_rows = find(smtt0{1} == n);
                smttl = timetable(datetime(smtt0{2}),smtt0{3});
                fclose(fid);
                smtt1 = timetable(datetime(smtt0{2}),smtt0{3});
                smtt_gl = smtt1(n_rows,'Var1');
                if isempty(smtt_gl)
```

```
            continue
        end
        smtt_gl = sortrows(smtt_gl, 'Time');
        smtt_gl = retime(smtt_gl, 'regular', 'linear', 'TimeStep', hours(1));
        sm_gl = smtt_gl.Var1;
        clear smtt0 smtt1 fn0 fn
    end
```



Get corresponding signature values

```
sig_abb2 = ["Wet end (p)"; "Wet end (l)"; ...
    "Dry start (p)"; "Dry start (l)"; ...
    "Dry end (p)"; "Dry end (l)"; ...
    "Wet start (p)"; "Wet start (l)"; ...
    "Wet to dry (p)"; "Wet to dry (l)"; ...
    "Dry to wet (p)"; "Dry to wet (l)"];
Oznet
```

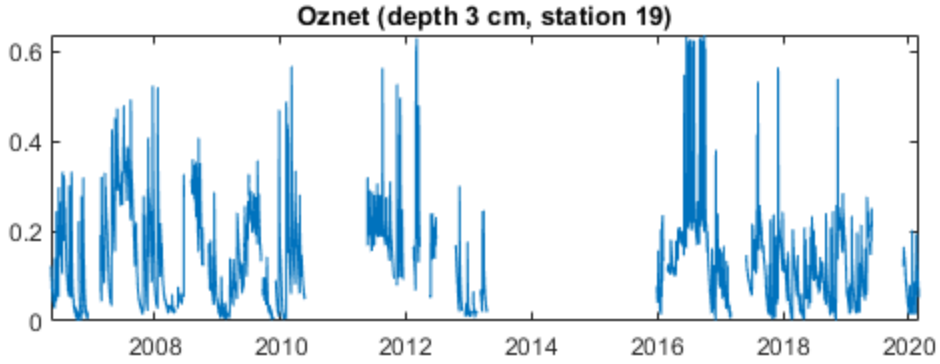
```
    xline_format = ["--r"; "-r"; ...
        "--r"; "-r"; ...
        "--b"; "-b"; ...
        "--b"; "-b"];
```

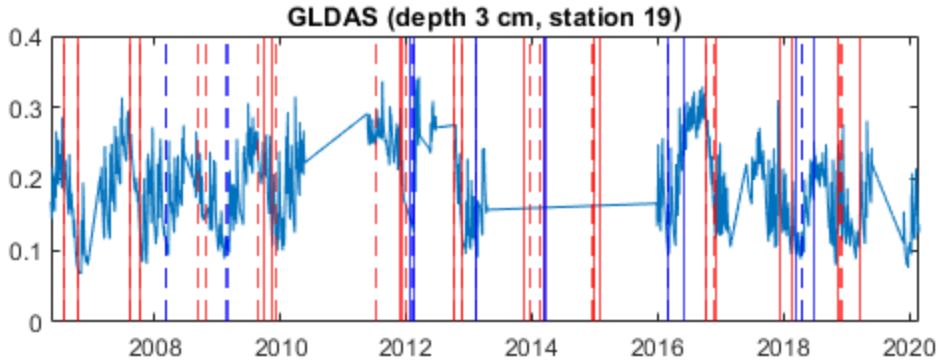
plot the time series of data

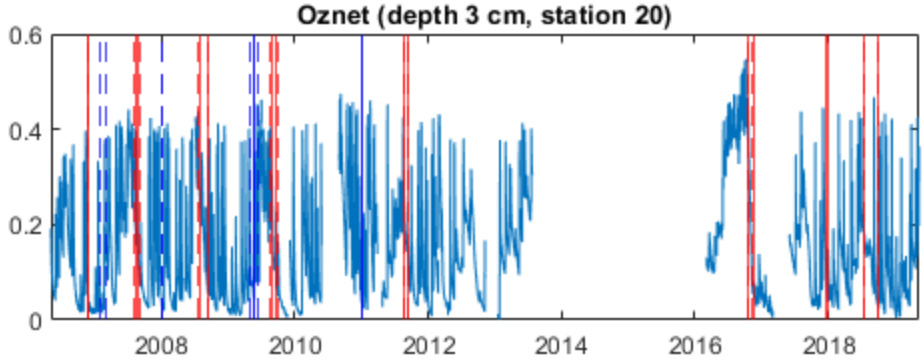
```
    figure;
    % Oznet
    subplot(2,1,1);
```

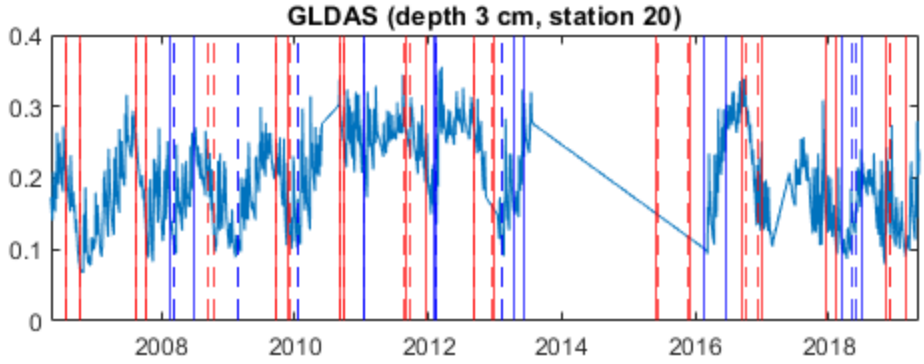
```
            plot(smtt_oz.Time, smtt_oz.Var1);hold on;
            titlename = sprintf("Oznet (depth %d cm, station %d)", depth(k), n);
            title(titlename);

            row1 = logical(sig.depth == depth(k));
            row2 = logical(sig.station == n);
            row3 = logical(sig.network == "Oznet");

            for s = [1,3,5,7]
                row4 = logical(sig.type == sig_abb2(s));
                row5 = row1&row2&row3&row4;
                selected_sig = sig.value(row5);
                clear row4 row5
                if ~isempty(selected_sig)
                    for i2 = 1:length(selected_sig)
                        if char(selected_sig(i2)) ~= "NaN " && char(selected_sig(i2)) ~= "NaT "
                            x1 = datetime(selected_sig(i2));
                            xline(x1,xline_format(s));hold on;
                        end
                    end
                end
            end

            for s = [2,4,6,8]
                row4 = logical(sig.type == sig_abb2(s));
                row5 = row1&row2&row3&row4;
                selected_sig = sig.value(row5);
                clear row4 row5
                if ~isempty(selected_sig)
                    for i2 = 1:length(selected_sig)
                        if char(selected_sig(i2)) ~= "NaN " && char(selected_sig(i2)) ~= "NaT "
                            x1 = datetime(selected_sig(i2));
                            xline(x1,xline_format(s));hold on;
                        end
                    end
                end
            end

            hold off;

            % GLDAS
            clear row3
            row3 = logical(sig.network == "GLDAS");

            subplot(2,1,2);
            plot(smtt_gl.Time, smtt_gl.Var1)
            titlename = sprintf("GLDAS (depth %d cm, station %d)", depth(k), n);
            title(titlename);

            for s = [1,3,5,7]
                row4 = logical(sig.type == sig_abb2(s));
                row5 = row1&row2&row3&row4;
                selected_sig = sig.value(row5);
```

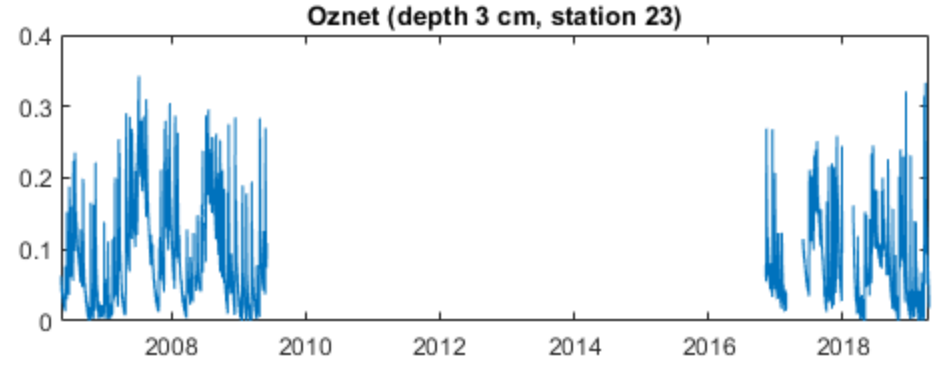
```
            clear row4 row5
            if ~isempty(selected_sig)
                for i2 = 1:length(selected_sig)
                    if char(selected_sig(i2)) ~= "NaN " && char(selected_sig(i2)) ~= "NaT "
                        x1 = datetime(selected_sig(i2));
                        xline(x1,xline_format(s));hold on;
                    end
                end
            end
        end

        for s = [2,4,6,8]
            row4 = logical(sig.type == sig_abb2(s));
            row5 = row1&row2&row3&row4;
            selected_sig = sig.value(row5);
            clear row4 row5
            if ~isempty(selected_sig)
                for i2 = 1:length(selected_sig)
                    if char(selected_sig(i2)) ~= "NaN " && char(selected_sig(i2)) ~= "NaT "
                        x1 = datetime(selected_sig(i2));
                        xline(x1,xline_format(s));hold on;
                    end
                end
            end
        end

        hold off;
```

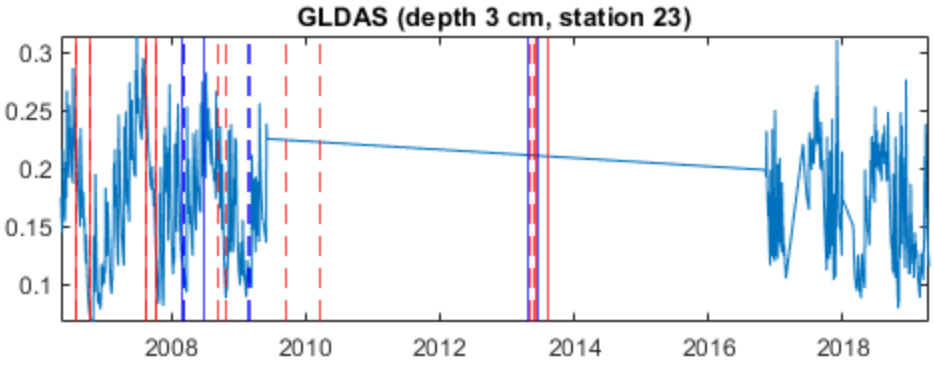

Oznet (depth 3 cm, station 19)
0.6
0.4
0.2
0
2008
2010
2012
2014
2016
2018
2020

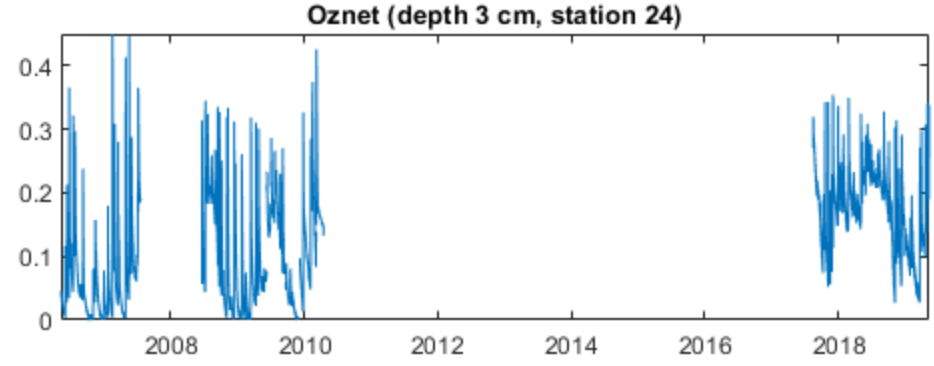

GLDAS (depth 3 cm, station 19)
0.4
0.3
0.2
0.1
0
2008
2010
2012
2014
2016
2018
2020

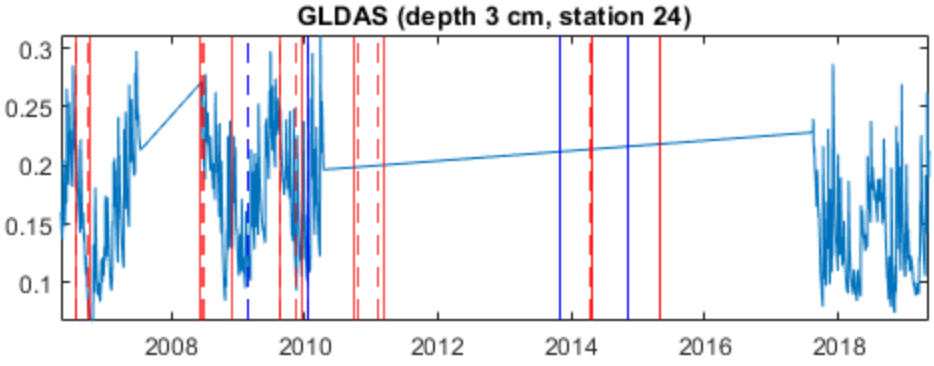

Oznet (depth 3 cm, station 20)
0.6
0.4
0.2
0
2008
2010
2012
2014
2016
2018

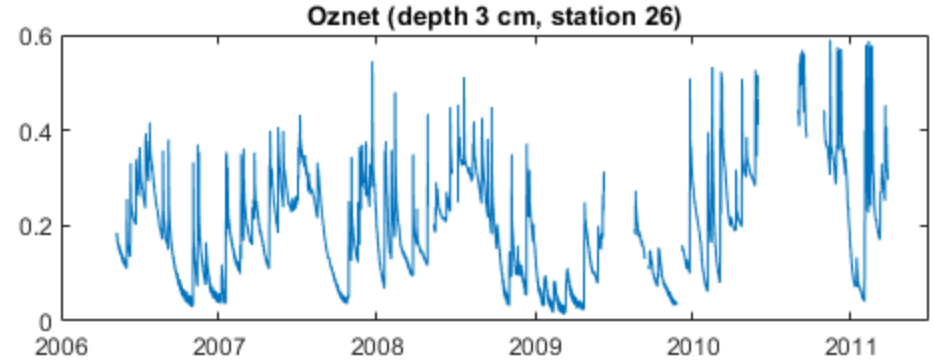

GLDAS (depth 3 cm, station 20)
0.4
0.3
0.2
0.1
0
2008
2010
2012
2014
2016
2018

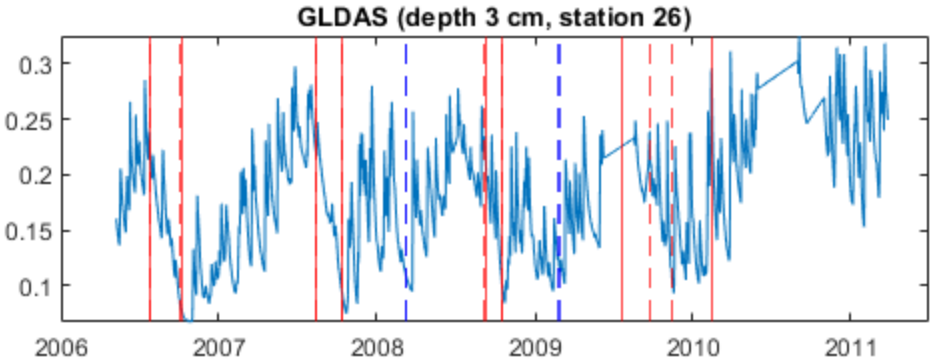

Oznet (depth 3 cm, station 23)
0.4
0.3
0.2
0.1
0
2008
2010
2012
2014
2016
2018

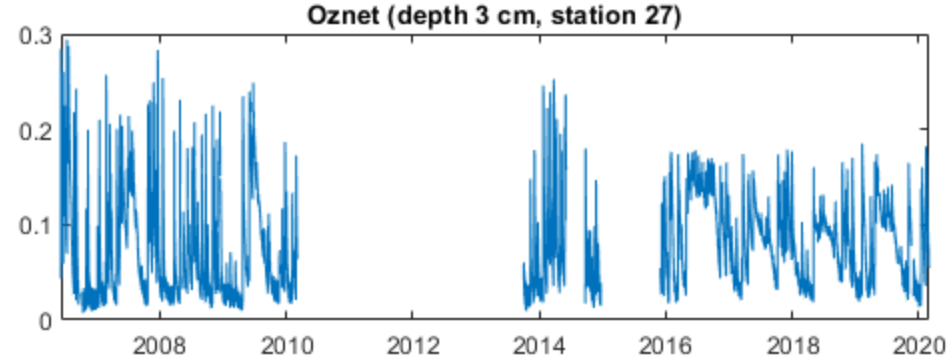

GLDAS (depth 3 cm, station 23)
0.3
0.25
0.2
0.15
0.1
2008
2010
2012
2014
2016
2018

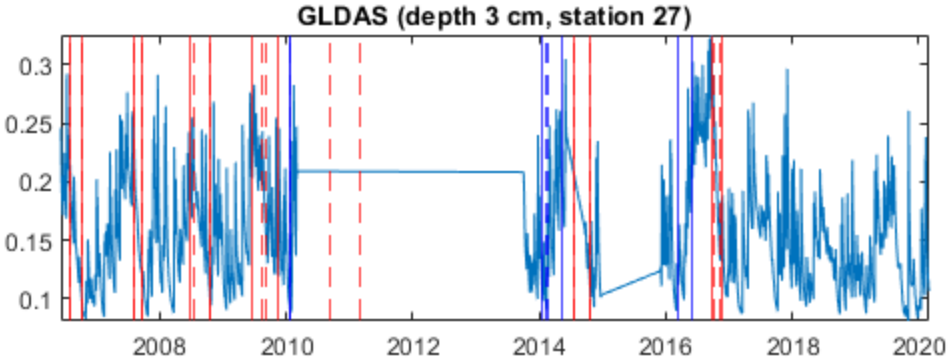

Oznet (depth 3 cm, station 24)
0.4
0.3
0.2
0.1
0
2008
2010
2012
2014
2016
2018

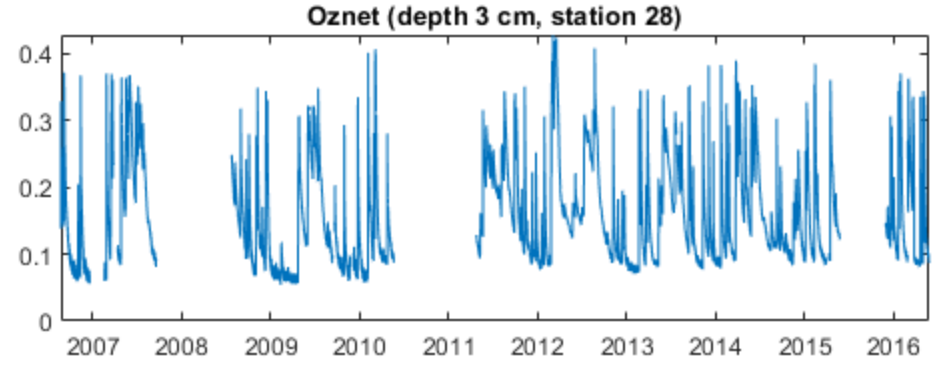

GLDAS (depth 3 cm, station 24)
0.3
0.25
0.2
0.15
0.1
2008
2010
2012
2014
2016
2018

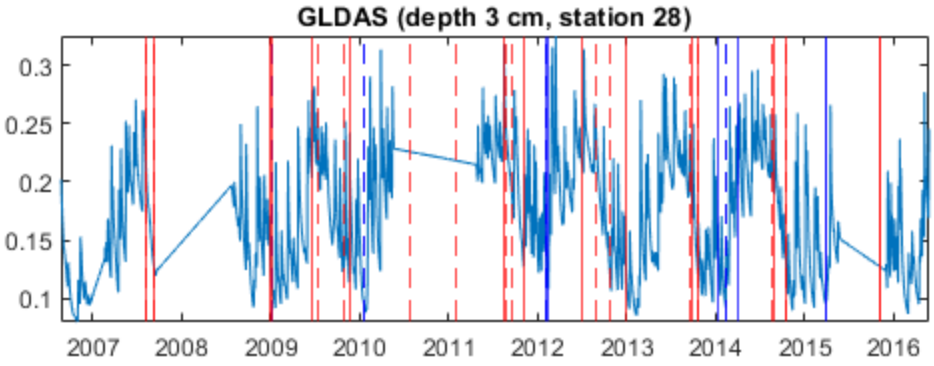

Oznet (depth 3 cm, station 26)
0.6
0.4
0.2
0
2006
2007
2008
2009
2010
2011

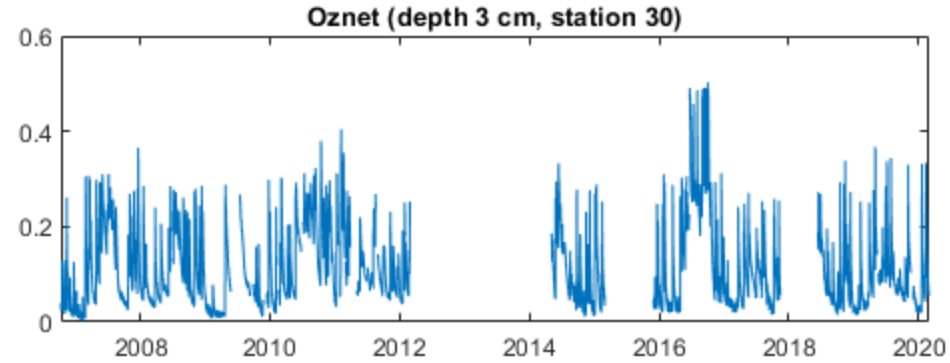

GLDAS (depth 3 cm, station 26)
0.3
0.25
0.2
0.15
0.1
2006
2007
2008
2009
2010
2011

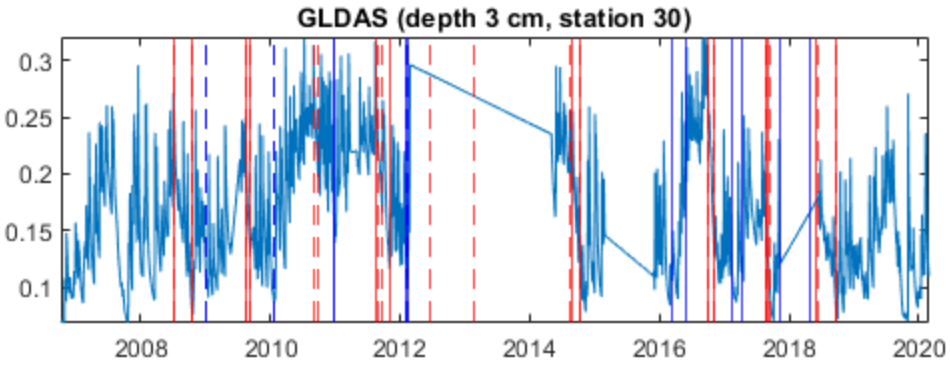

Oznet (depth 3 cm, station 27)
0.3
0.2
0.1
0
2008
2010
2012
2014
2016
2018
2020

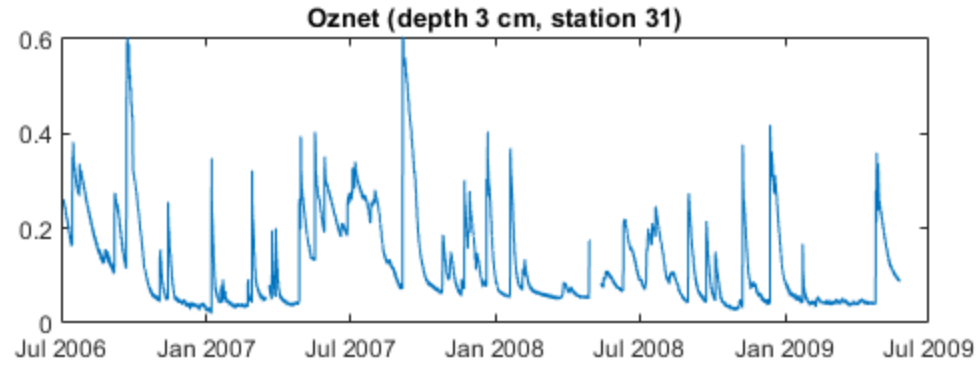

GLDAS (depth 3 cm, station 27)
0.3
0.25
0.2
0.15
0.1
2008
2010
2012
2014
2016
2018
2020

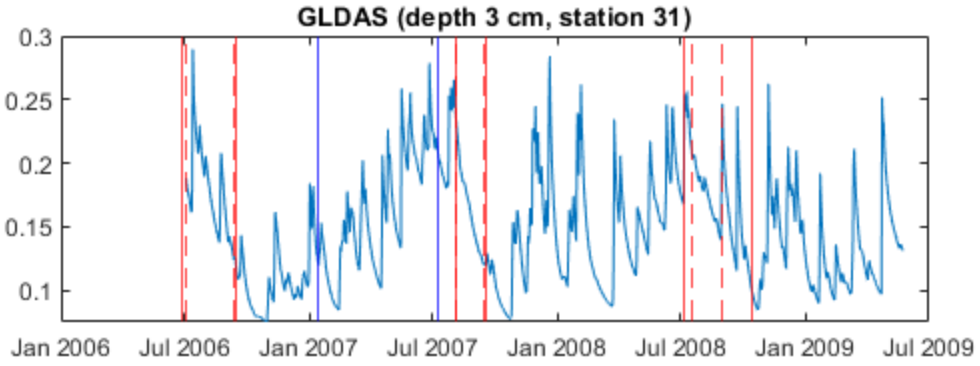

Oznet (depth 3 cm, station 28)
0.4
0.3
0.2
0.1
0
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016

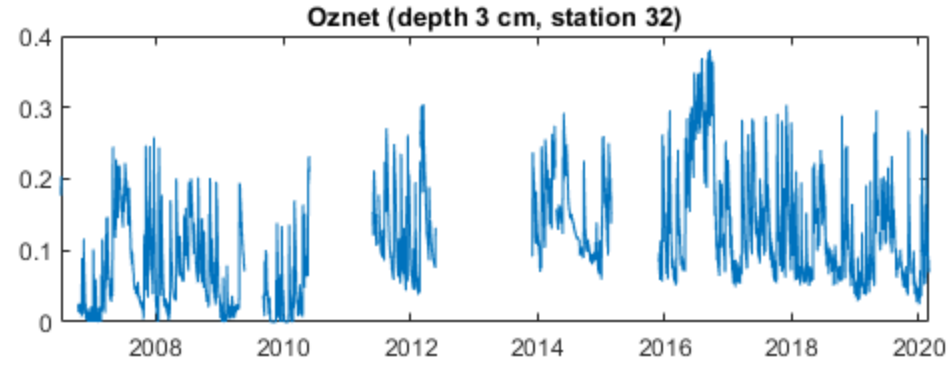

GLDAS (depth 3 cm, station 28)
0.3
0.25
0.2
0.15
0.1
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016

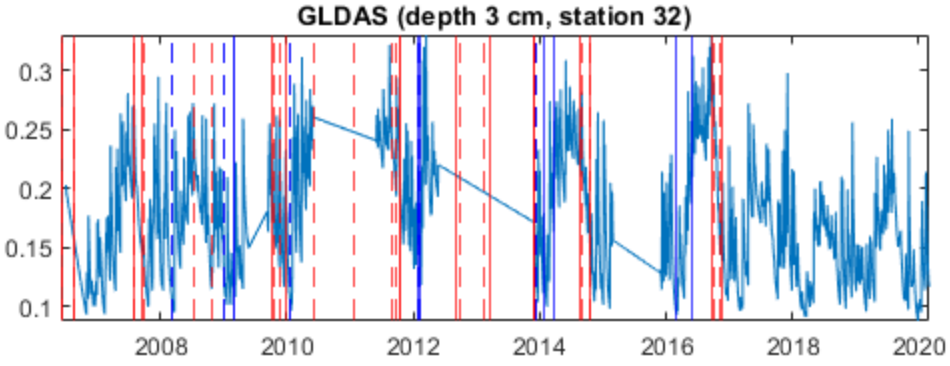

Oznet (depth 3 cm, station 30)
0.6
0.4
0.2
0
2008
2010
2012
2014
2016
2018
2020

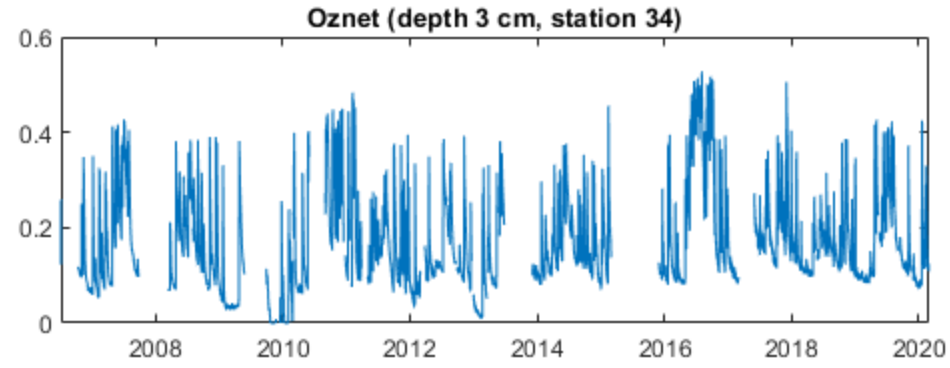

GLDAS (depth 3 cm, station 30)
0.3
0.25
0.2
0.15
0.1
2008
2010
2012
2014
2016
2018
2020

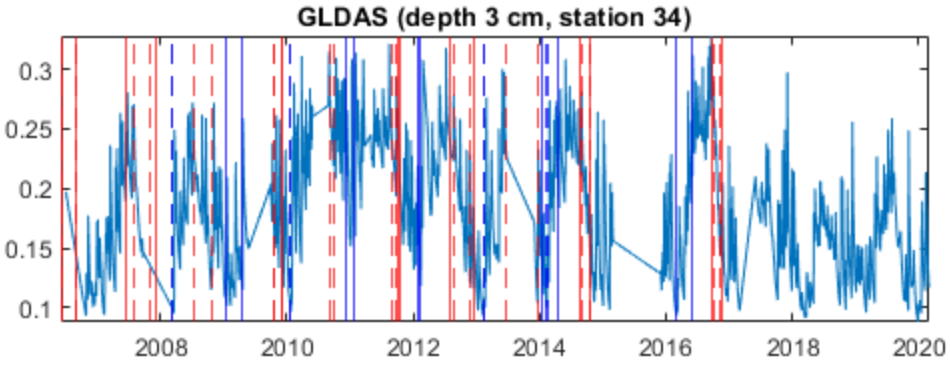

Oznet (depth 3 cm, station 31)
0.6
0.4
0.2
0
Jul 2006
Jan 2007
Jul 2007
Jan 2008
Jul 2008
Jan 2009
Jul 2009

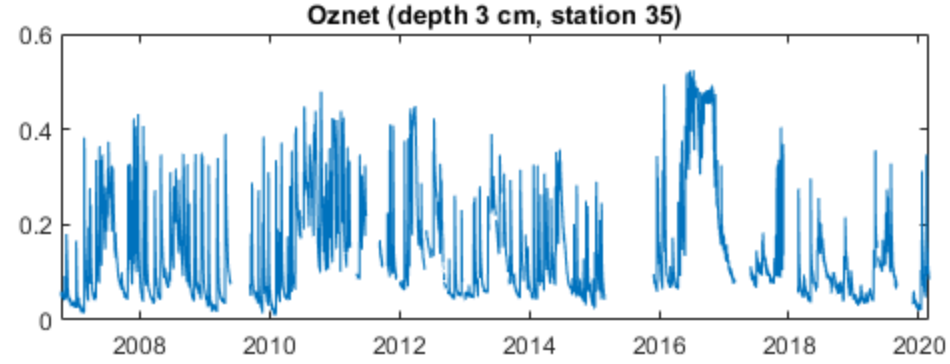

GLDAS (depth 3 cm, station 31)
0.3
0.25
0.2
0.15
0.1
Jan 2006
Jul 2006
Jan 2007
Jul 2007
Jan 2008
Jul 2008
Jan 2009
Jul 2009

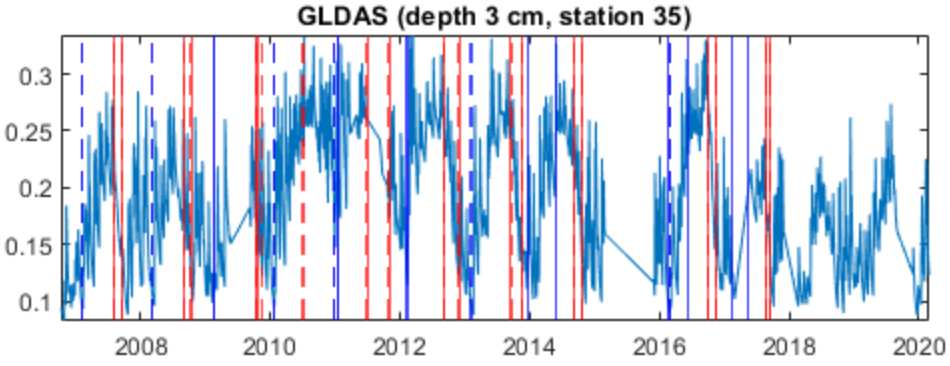

Oznet (depth 3 cm, station 32)
0.4
0.3
0.2
0.1
0
2008
2010
2012
2014
2016
2018
2020

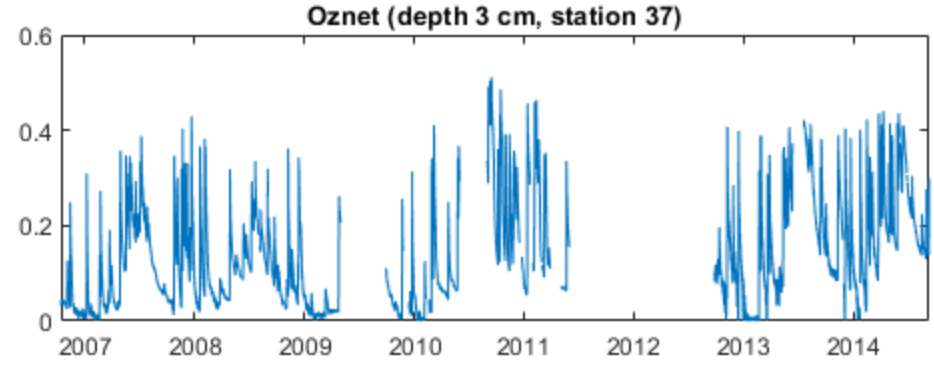

GLDAS (depth 3 cm, station 32)
0.3
0.25
0.2
0.15
0.1
2008
2010
2012
2014
2016
2018
2020

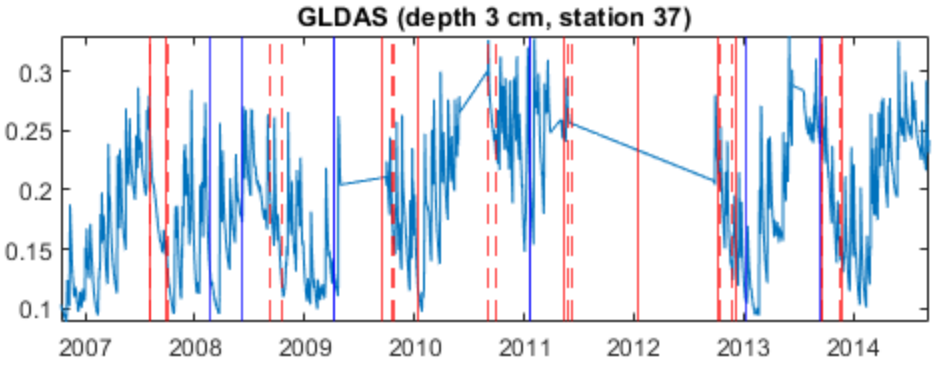

Oznet (depth 3 cm, station 34)
0.6
0.4
0.2
0
2008
2010
2012
2014
2016
2018
2020

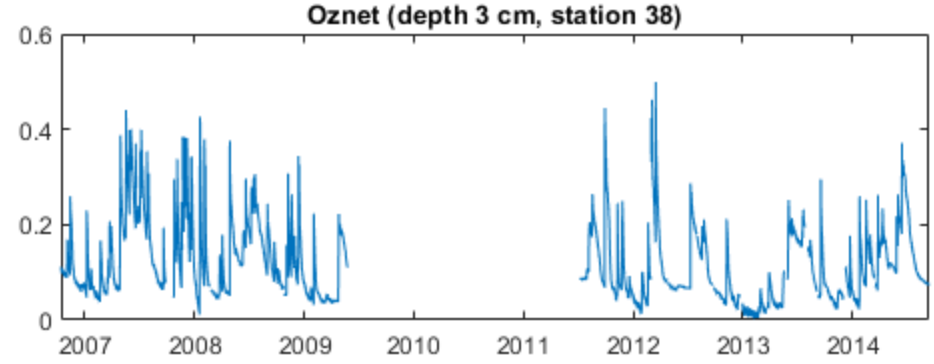

GLDAS (depth 3 cm, station 34)
0.3
0.25
0.2
0.15
0.1
2008
2010
2012
2014
2016
2018
2020

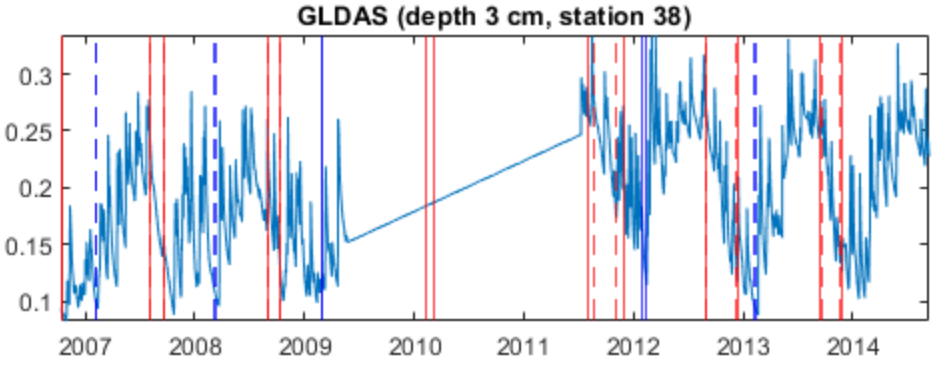

Oznet (depth 3 cm, station 35)
0.6
0.4
0.2
0
2008
2010
2012
2014
2016
2018
2020

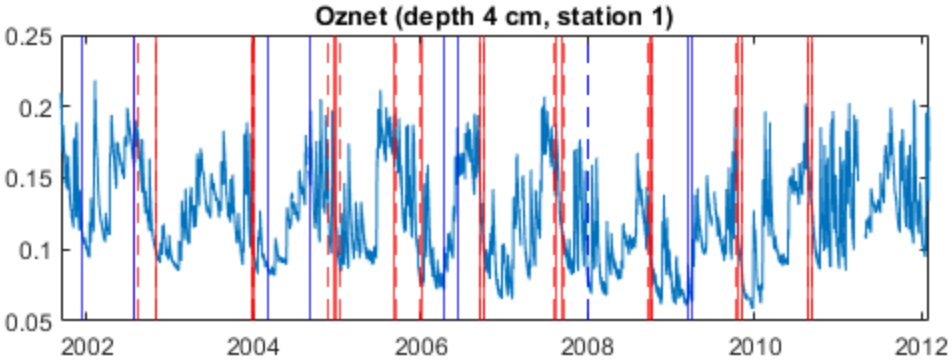

GLDAS (depth 3 cm, station 35)
0.3
0.25
0.2
0.15
0.1
2008
2010
2012
2014
2016
2018
2020

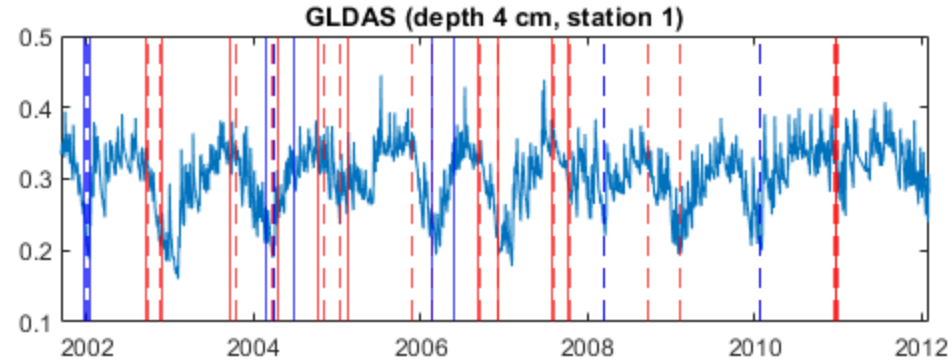

Oznet (depth 3 cm, station 37)
0.6
0.4
0.2
0
2007
2008
2009
2010
2011
2012
2013
2014

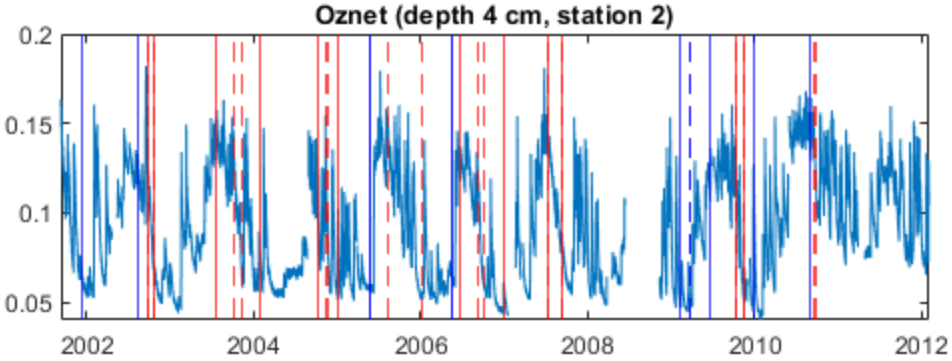

GLDAS (depth 3 cm, station 37)
0.3
0.25
0.2
0.15
0.1
2007
2008
2009
2010
2011
2012
2013
2014

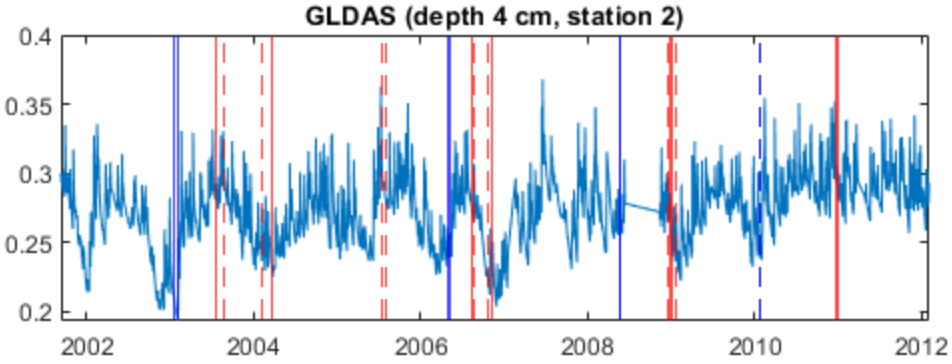

Oznet (depth 3 cm, station 38)
0.6
0.4
0.2
0
2007
2008
2009
2010
2011
2012
2013
2014

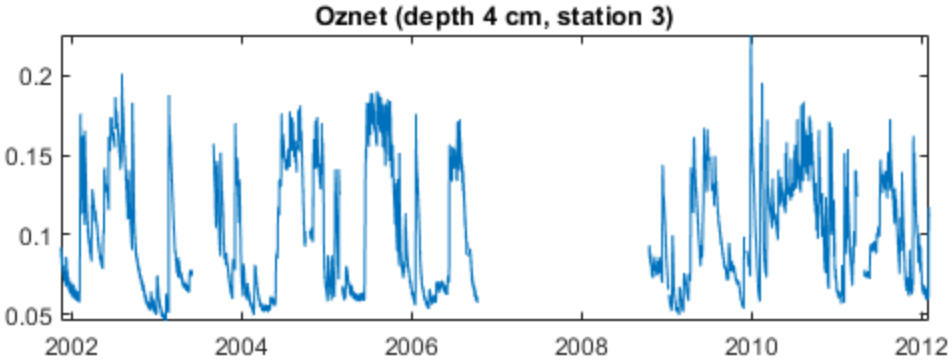

GLDAS (depth 3 cm, station 38)
0.3
0.25
0.2
0.15
0.1
2007
2008
2009
2010
2011
2012
2013
2014

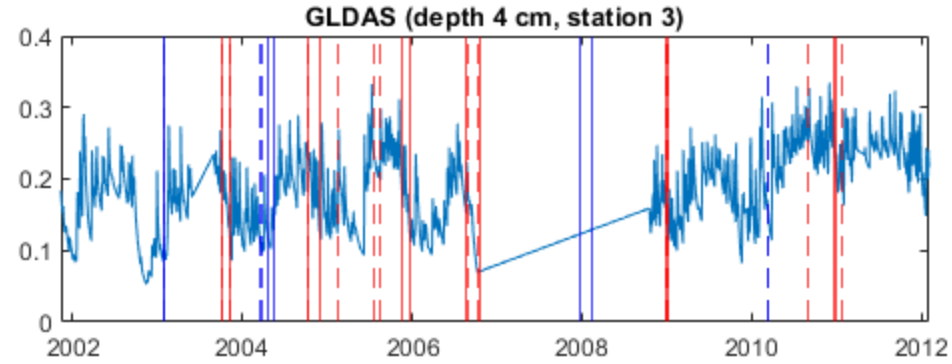

Oznet (depth 4 cm, station 1)
0.25
0.2
0.15
0.1
0.05
2002
2004
2006
2008
2010
2012

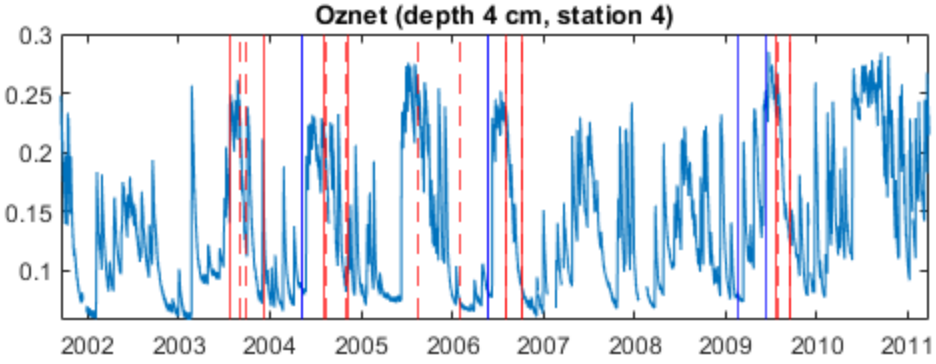

GLDAS (depth 4 cm, station 1)
0.5
0.4
0.3
0.2
0.1
2002
2004
2006
2008
2010
2012

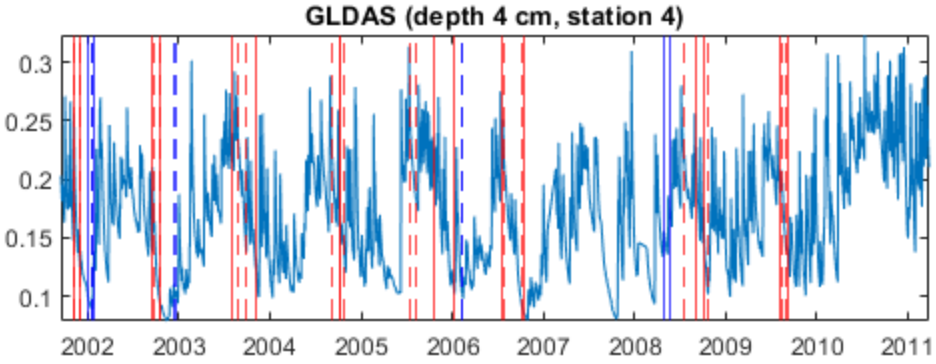

Oznet (depth 4 cm, station 2)
0.2
0.15
0.1
0.05
2002
2004
2006
2008
2010
2012

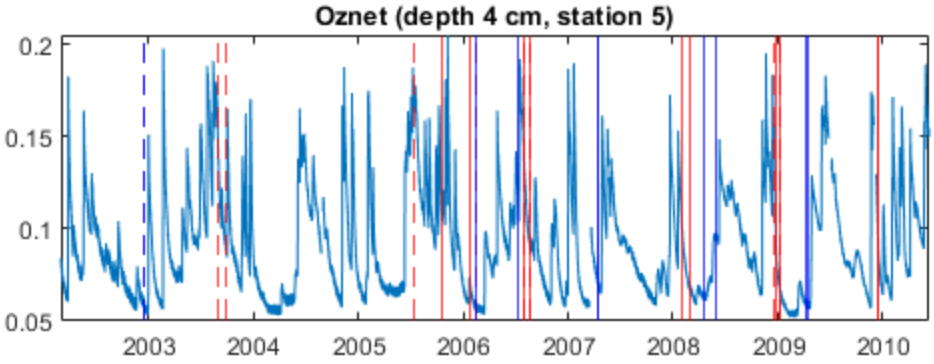

GLDAS (depth 4 cm, station 2)
0.4
0.35
0.3
0.25
0.2
2002
2004
2006
2008
2010
2012

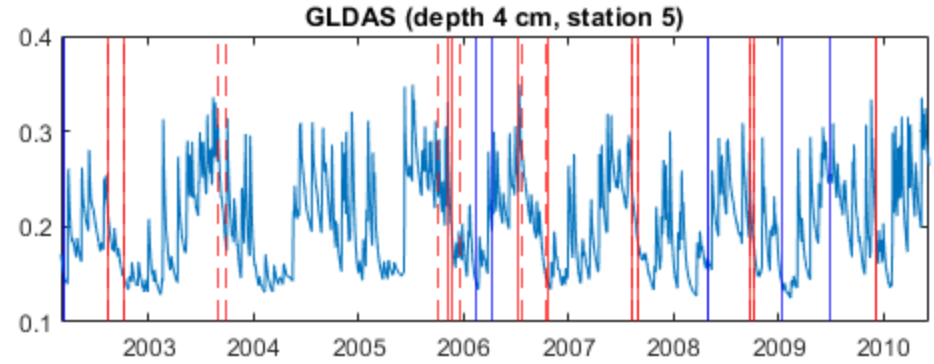

Oznet (depth 4 cm, station 3)
0.2
0.15
0.1
0.05
2002
2004
2006
2008
2010
2012

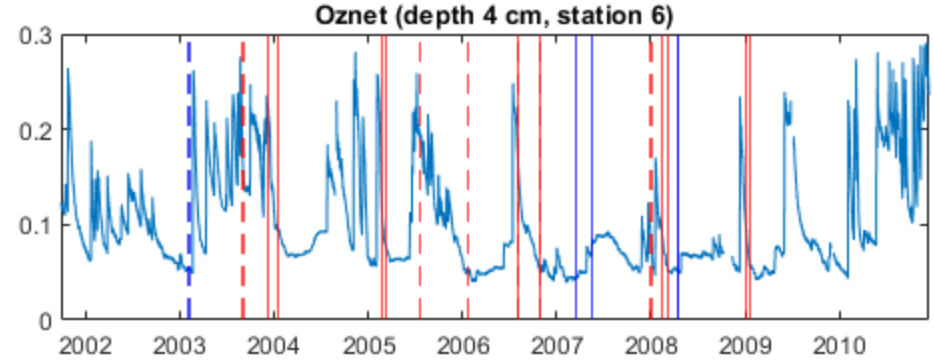

GLDAS (depth 4 cm, station 3)
0.4
0.3
0.2
0.1
0
2002
2004
2006
2008
2010
2012

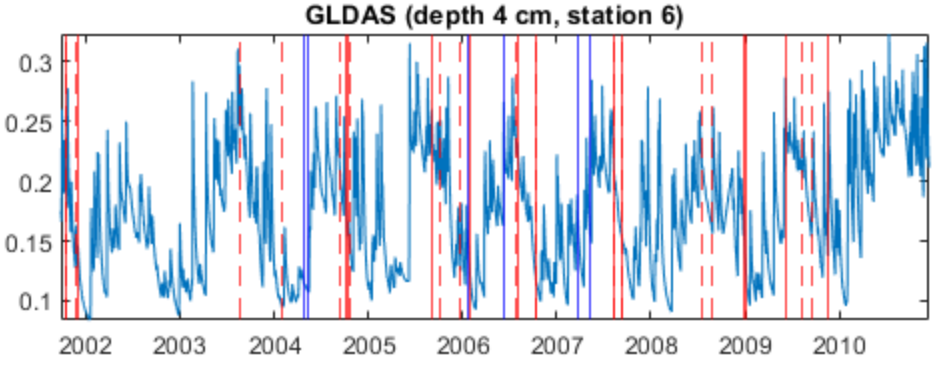

Oznet (depth 4 cm, station 4)
0.3
0.25
0.2
0.15
0.1
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011

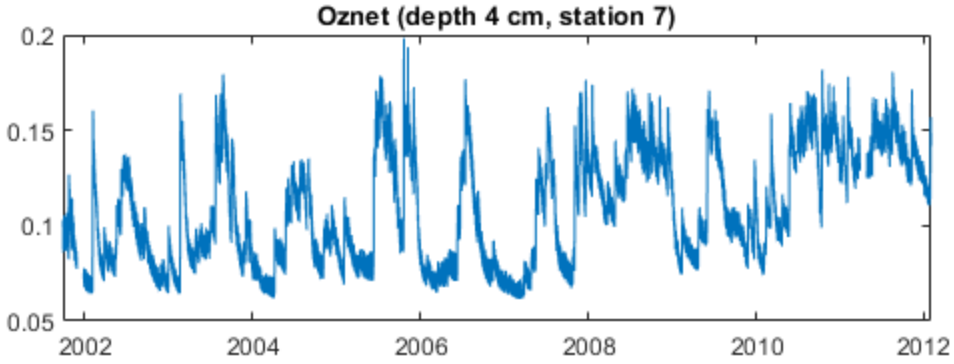

GLDAS (depth 4 cm, station 4)
0.3
0.25
0.2
0.15
0.1
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011

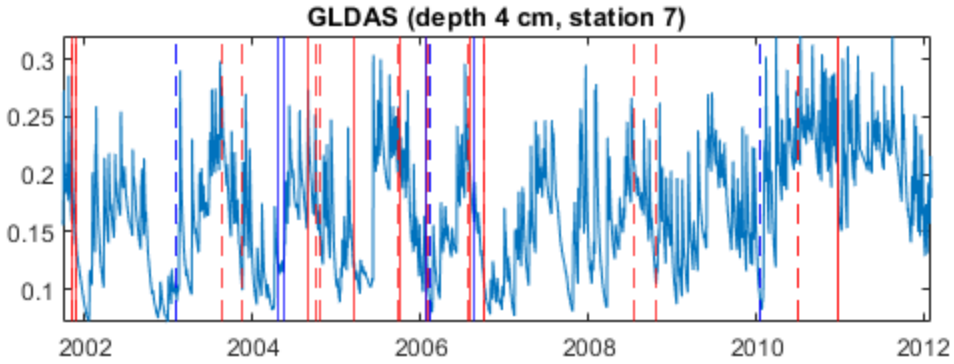

Oznet (depth 4 cm, station 5)
0.2
0.15
0.1
0.05
2003
2004
2005
2006
2007
2008
2009
2010

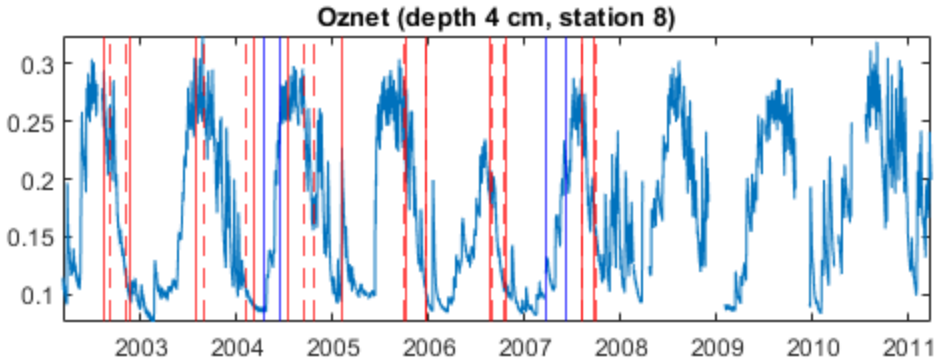

GLDAS (depth 4 cm, station 5)
0.4
0.3
0.2
0.1
2003
2004
2005
2006
2007
2008
2009
2010

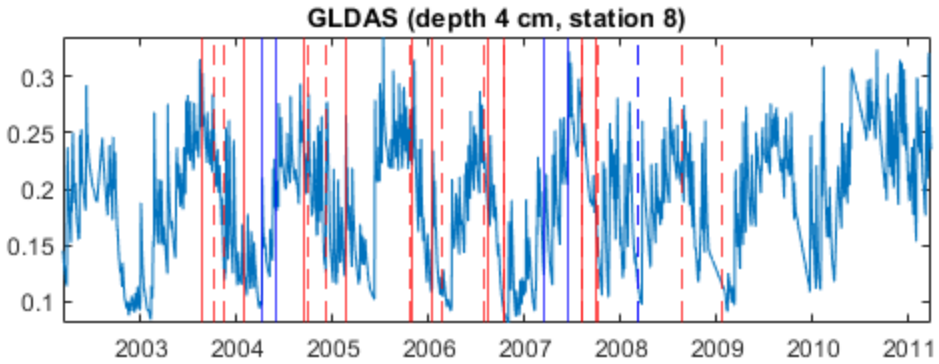

Oznet (depth 4 cm, station 6)
0.3
0.2
0.1
0
2002
2003
2004
2005
2006
2007
2008
2009
2010

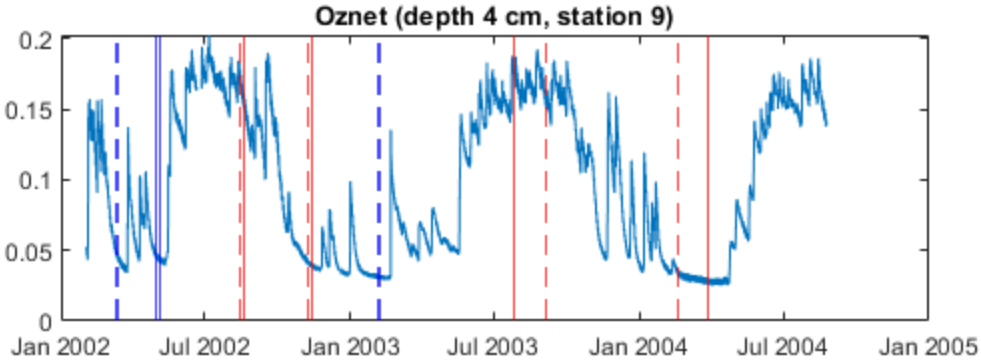

GLDAS (depth 4 cm, station 6)
0.3
0.25
0.2
0.15
0.1
2002
2003
2004
2005
2006
2007
2008
2009
2010

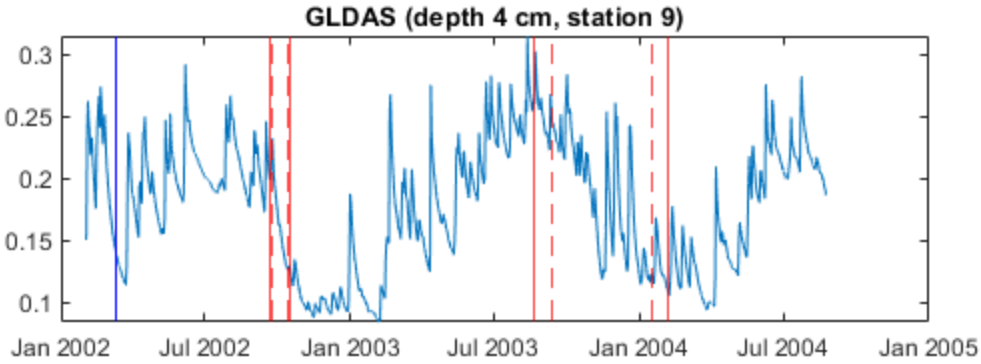

Oznet (depth 4 cm, station 7)
0.2
0.15
0.1
0.05
2002
2004
2006
2008
2010
2012

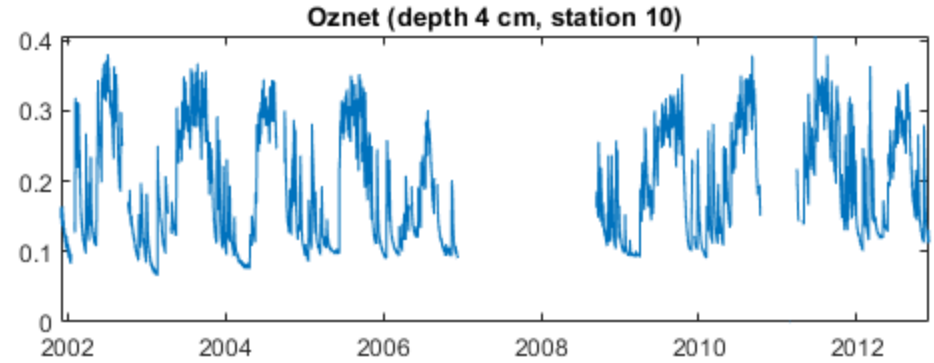

GLDAS (depth 4 cm, station 7)
0.3
0.25
0.2
0.15
0.1
2002
2004
2006
2008
2010
2012

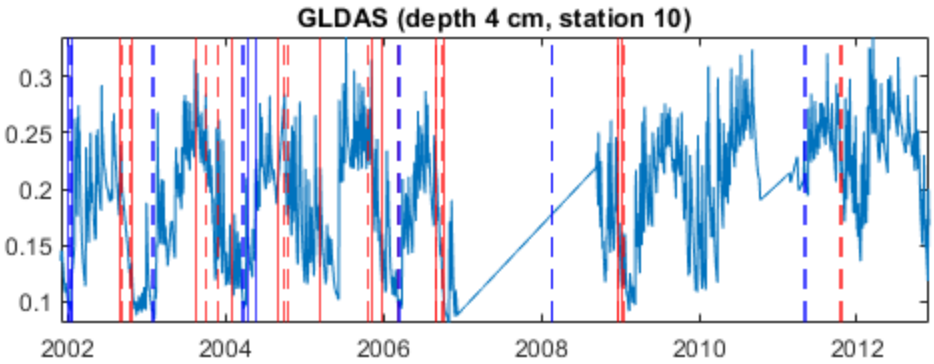

Oznet (depth 4 cm, station 8)
0.3
0.25
0.2
0.15
0.1
2003
2004
2005
2006
2007
2008
2009
2010
2011

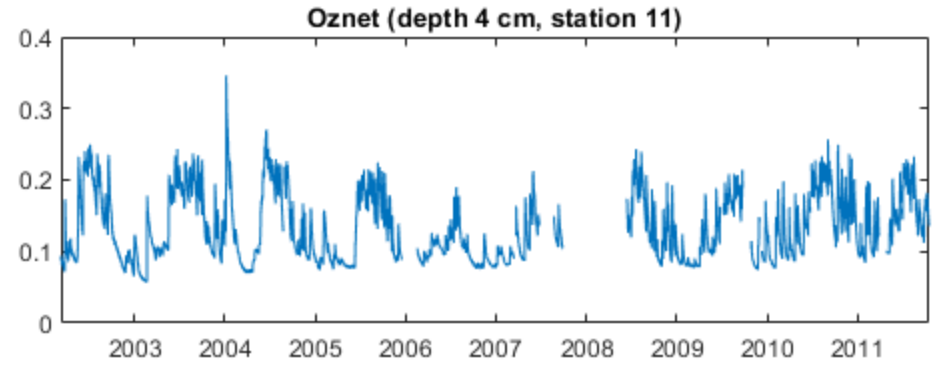

GLDAS (depth 4 cm, station 8)
0.3
0.25
0.2
0.15
0.1
2003
2004
2005
2006
2007
2008
2009
2010
2011

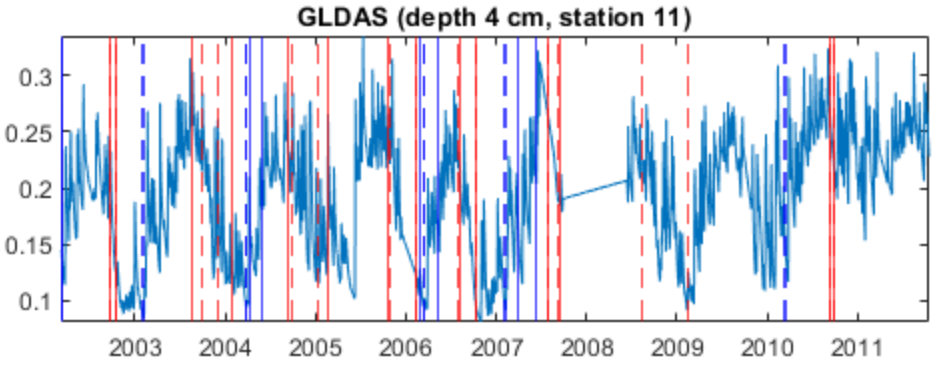

Oznet (depth 4 cm, station 9)
0.2
0.15
0.1
0.05
0
Jan 2002
Jul 2002
Jan 2003
Jul 2003
Jan 2004
Jul 2004
Jan 2005

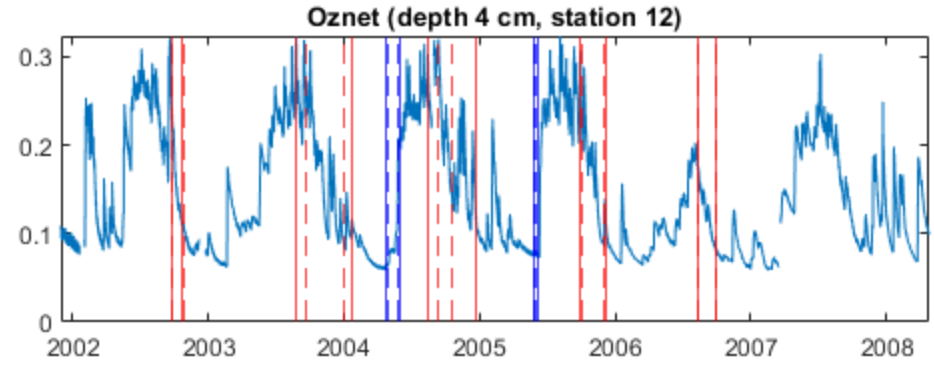

GLDAS (depth 4 cm, station 9)
0.3
0.25
0.2
0.15
0.1
Jan 2002
Jul 2002
Jan 2003
Jul 2003
Jan 2004
Jul 2004
Jan 2005

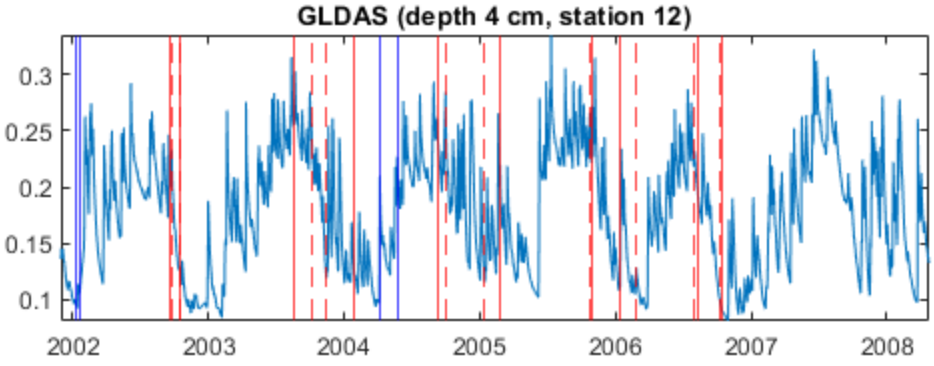

Oznet (depth 4 cm, station 10)
0.4
0.3
0.2
0.1
0
2002
2004
2006
2008
2010
2012

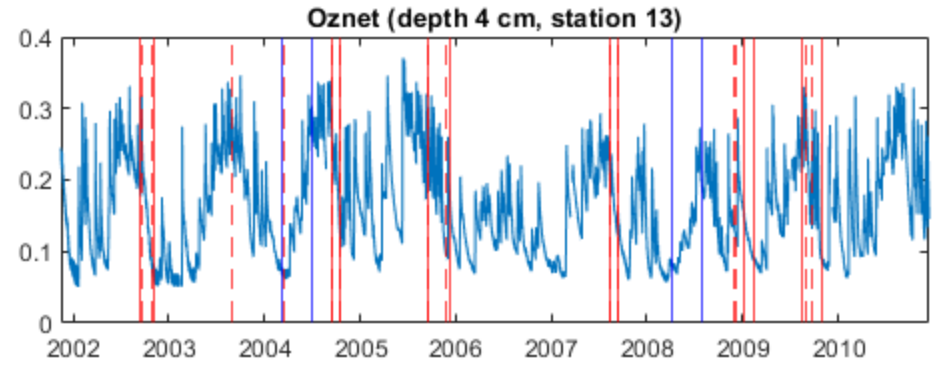

GLDAS (depth 4 cm, station 10)
0.3
0.25
0.2
0.15
0.1
2002
2004
2006
2008
2010
2012

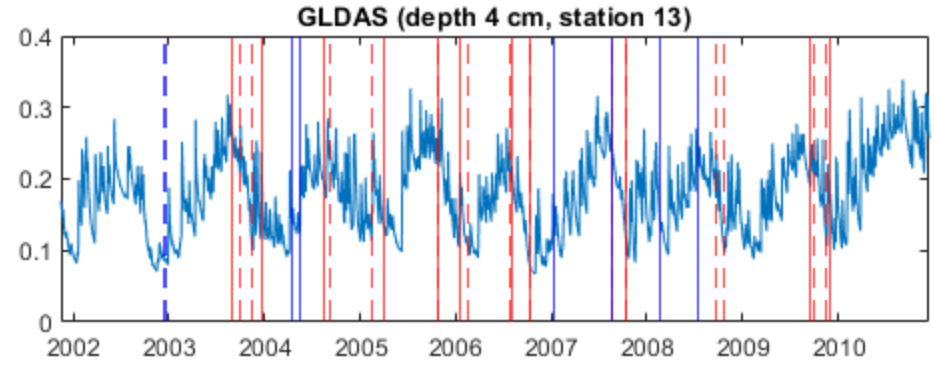

Oznet (depth 4 cm, station 11)
0.4
0.3
0.2
0.1
0
2003
2004
2005
2006
2007
2008
2009
2010
2011

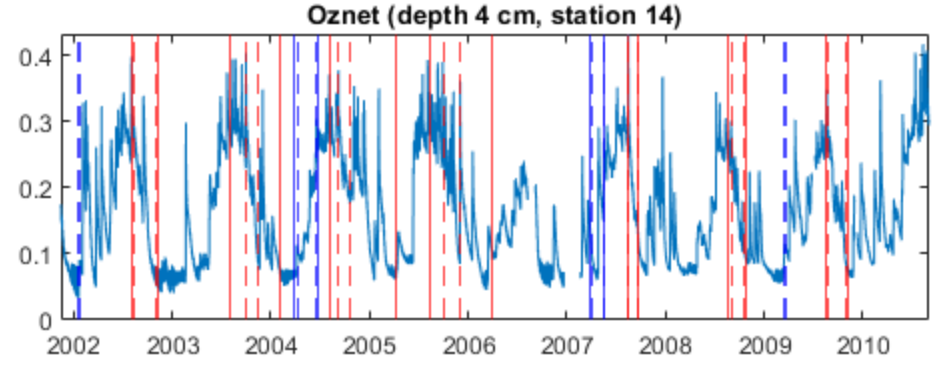

GLDAS (depth 4 cm, station 11)
0.3
0.25
0.2
0.15
0.1
2003
2004
2005
2006
2007
2008
2009
2010
2011

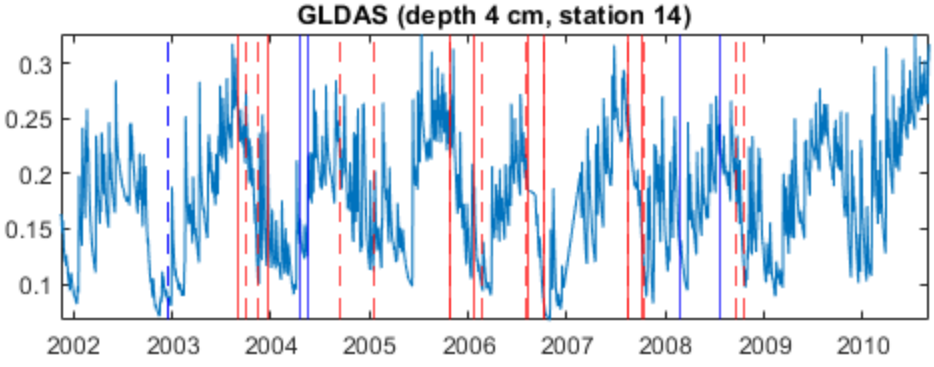

Oznet (depth 4 cm, station 12)
0.3
0.2
0.1
0
2002
2003
2004
2005
2006
2007
2008

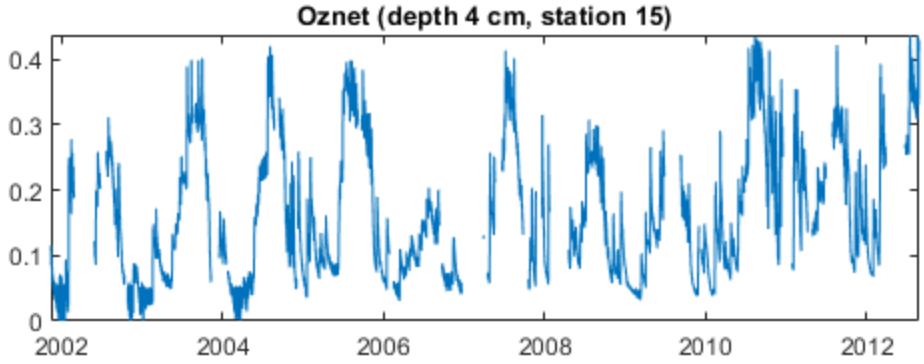

GLDAS (depth 4 cm, station 12)
0.3
0.25
0.2
0.15
0.1
2002
2003
2004
2005
2006
2007
2008

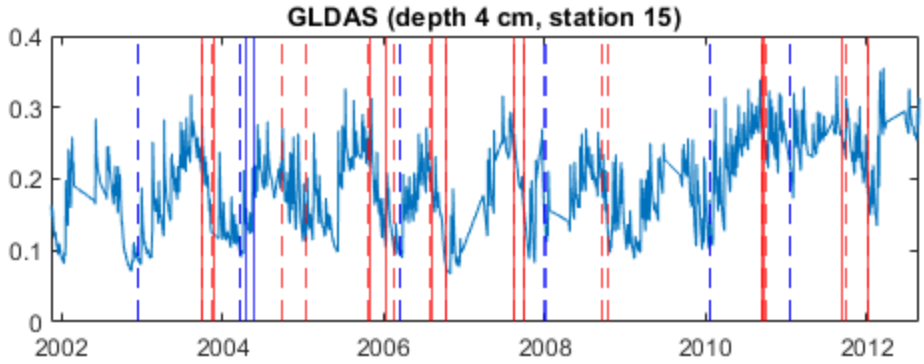

Oznet (depth 4 cm, station 13)
0.4
0.3
0.2
0.1
0
2002
2003
2004
2005
2006
2007
2008
2009
2010

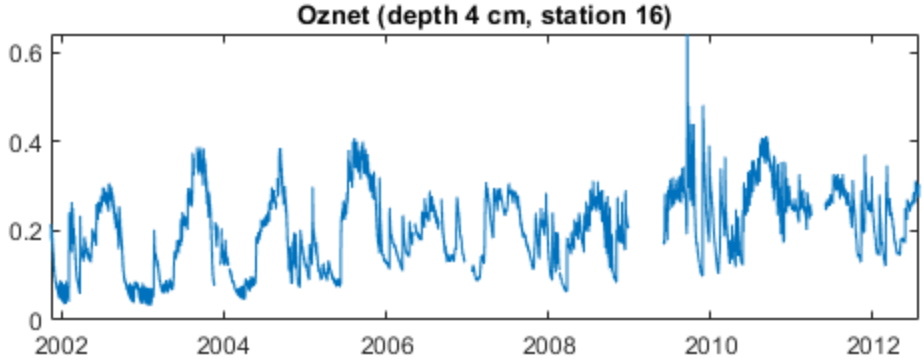

GLDAS (depth 4 cm, station 13)
0.4
0.3
0.2
0.1
0
2002
2003
2004
2005
2006
2007
2008
2009
2010

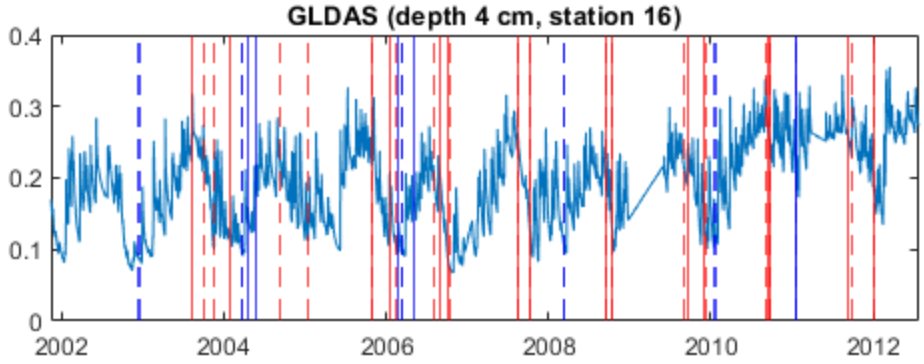

Oznet (depth 4 cm, station 14)
0.4
0.3
0.2
0.1
0
2002
2003
2004
2005
2006
2007
2008
2009
2010

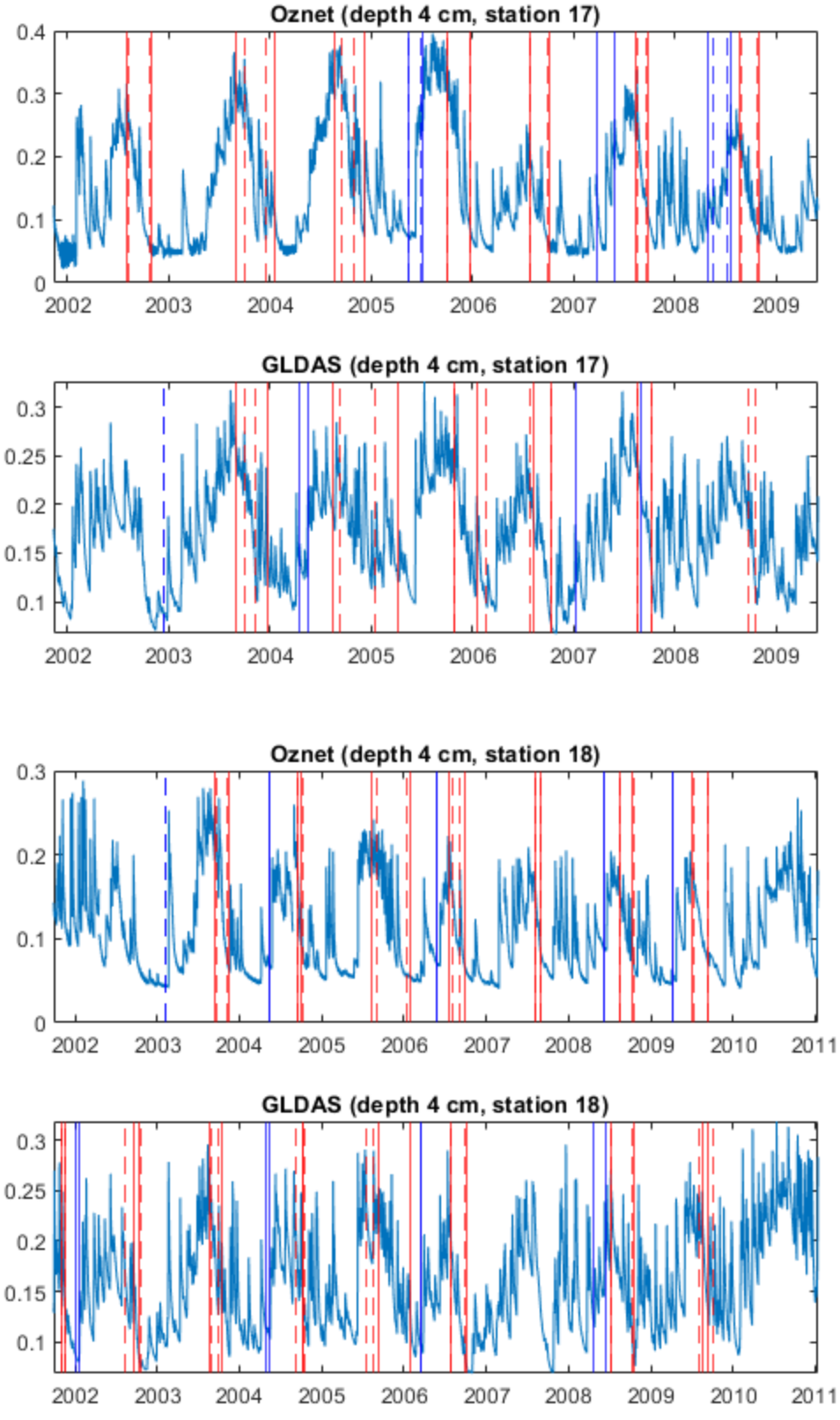

GLDAS (depth 4 cm, station 14)
0.3
0.25
0.2
0.15
0.1
2002
2003
2004
2005
2006
2007
2008
2009
2010

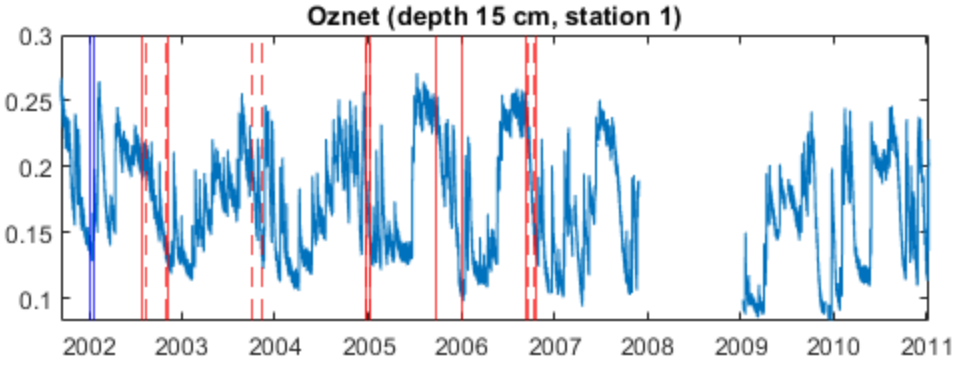

Oznet (depth 4 cm, station 15)
0.4
0.3
0.2
0.1
0
2002
2004
2006
2008
2010
2012

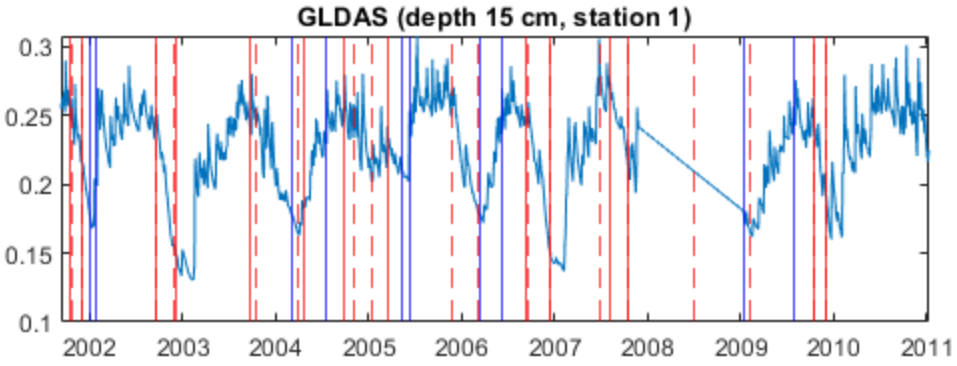

GLDAS (depth 4 cm, station 15)
0.4
0.3
0.2
0.1
0
2002
2004
2006
2008
2010
2012

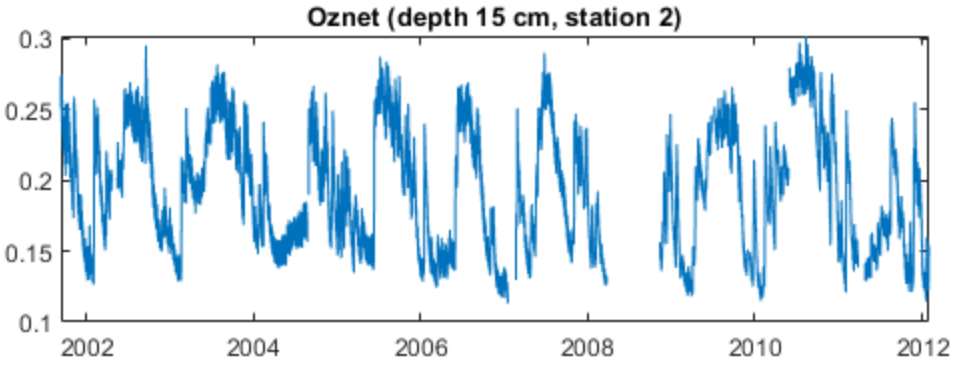

Oznet (depth 4 cm, station 16)
0.6
0.4
0.2
0
2002
2004
2006
2008
2010
2012

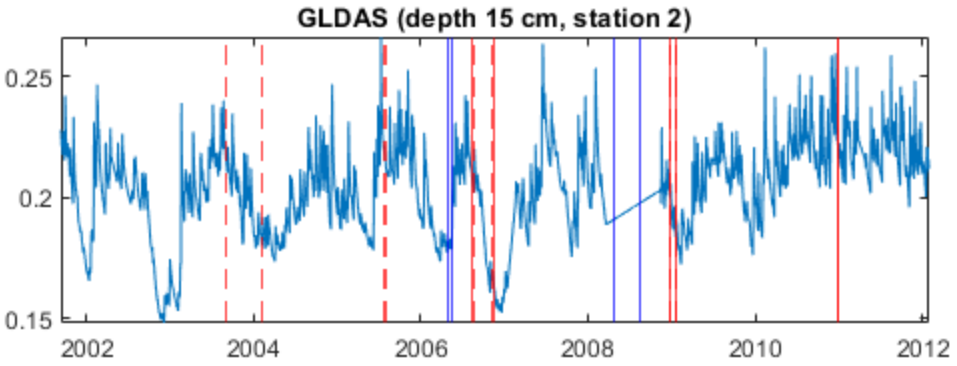

GLDAS (depth 4 cm, station 16)
0.4
0.3
0.2
0.1
0
2002
2004
2006
2008
2010
2012

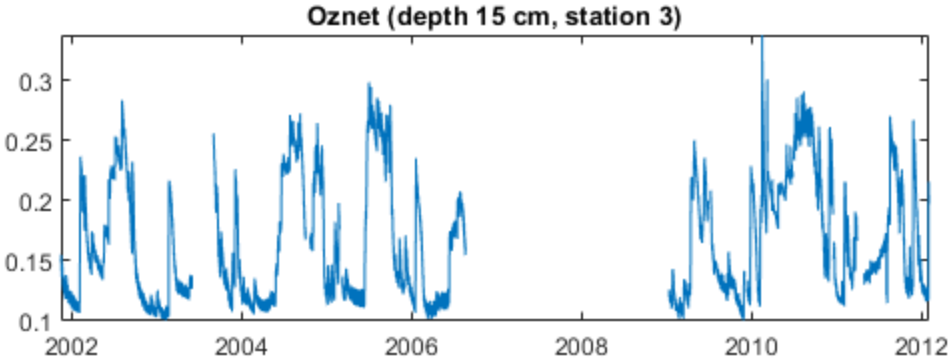

Oznet (depth 4 cm, station 17)
0.4
0.3
0.2
0.1
0
2002
2003
2004
2005
2006
2007
2008
2009
GLDAS (depth 4 cm, station 17)
0.3
0.25
0.2
0.15
0.1
2002
2003
2004
2005
2006
2007
2008
2009
Oznet (depth 4 cm, station 18)
0.3
0.2
0.1
0
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
GLDAS (depth 4 cm, station 18)
0.3
0.25
0.2
0.15
0.1
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011

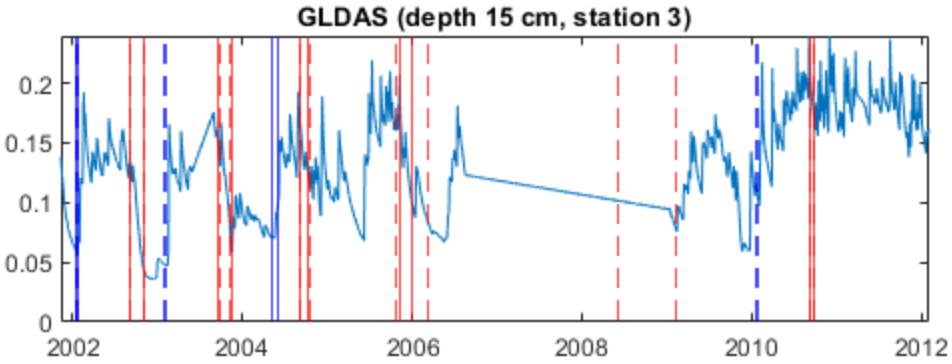

Oznet (depth 15 cm, station 1)
0.3
0.25
0.2
0.15
0.1
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011

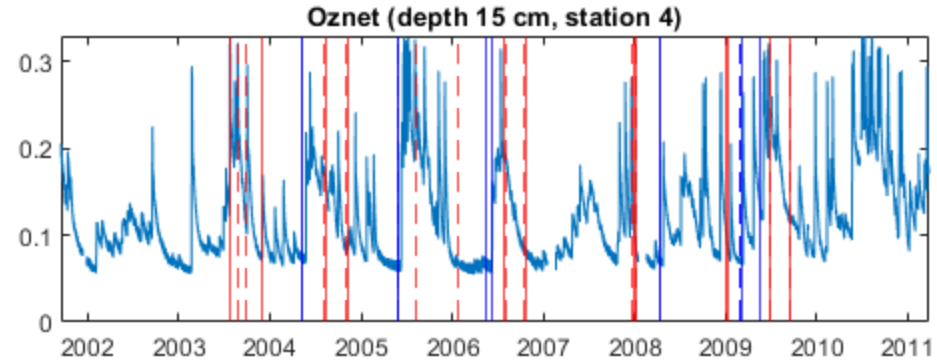

GLDAS (depth 15 cm, station 1)
0.3
0.25
0.2
0.15
0.1
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011

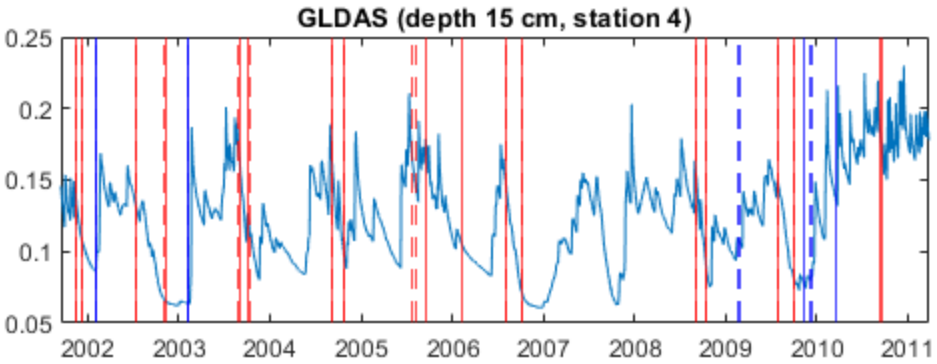

Oznet (depth 15 cm, station 2)
0.3
0.25
0.2
0.15
0.1
2002
2004
2006
2008
2010
2012

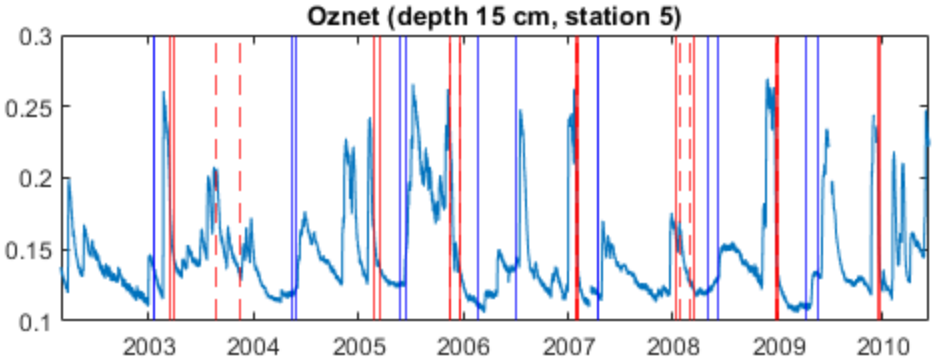

GLDAS (depth 15 cm, station 2)
0.25
0.2
0.15
2002
2004
2006
2008
2010
2012

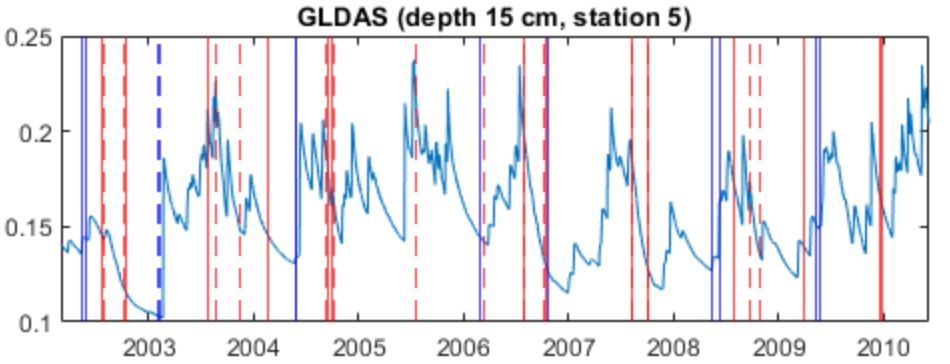

Oznet (depth 15 cm, station 3)
0.3
0.25
0.2
0.15
0.1
2002
2004
2006
2008
2010
2012

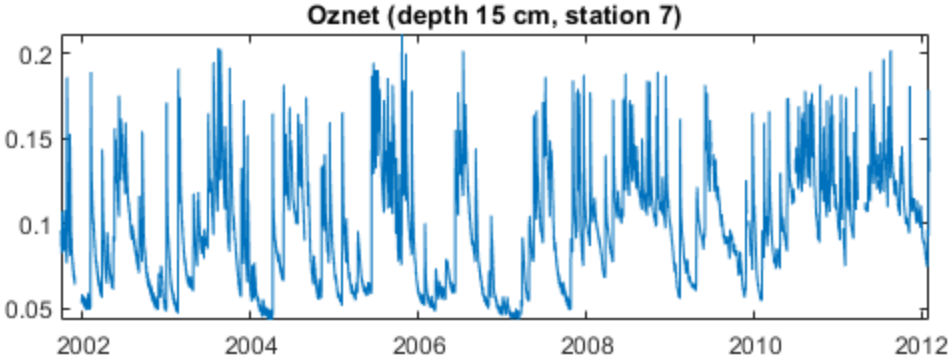

GLDAS (depth 15 cm, station 3)
0.2
0.15
0.1
0.05
0
2002
2004
2006
2008
2010
2012

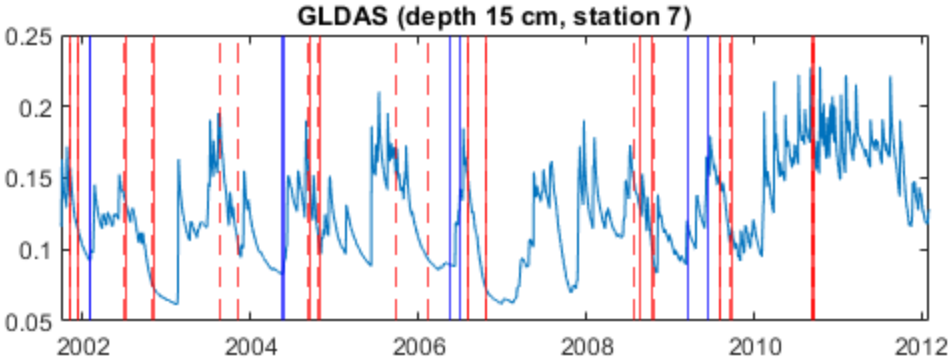

Oznet (depth 15 cm, station 4)
0.3
0.2
0.1
0
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011

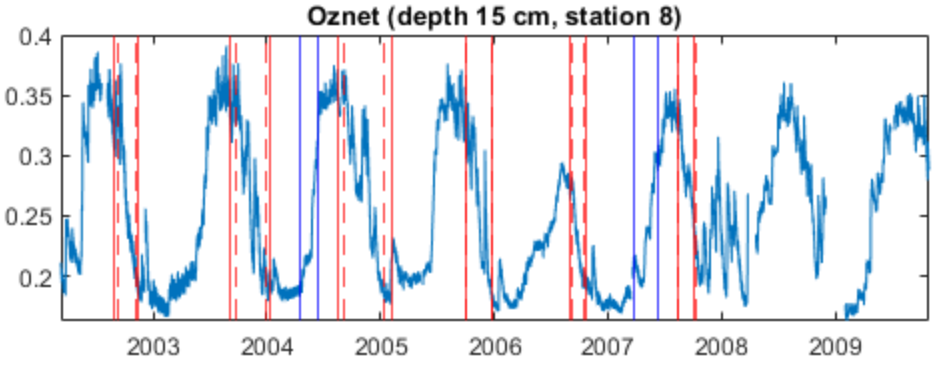

GLDAS (depth 15 cm, station 4)
0.25
0.2
0.15
0.1
0.05
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011

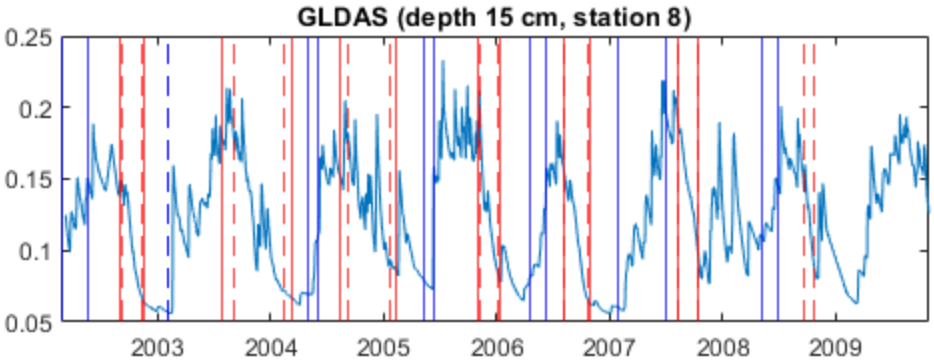

Oznet (depth 15 cm, station 5)
0.3
0.25
0.2
0.15
0.1
2003
2004
2005
2006
2007
2008
2009
2010

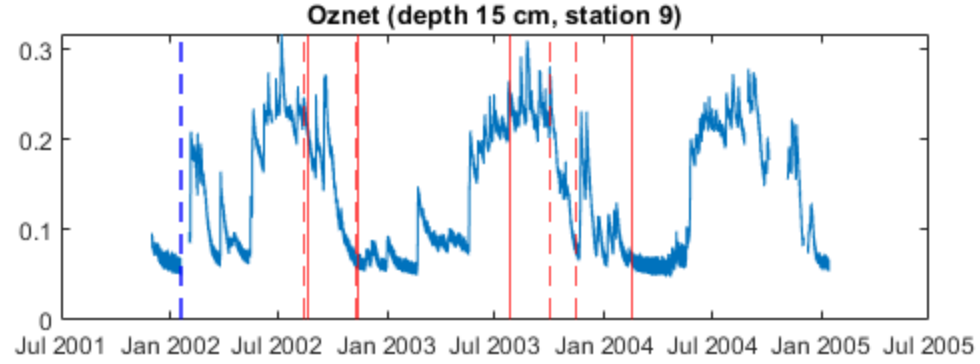

GLDAS (depth 15 cm, station 5)
0.25
0.2
0.15
0.1
2003
2004
2005
2006
2007
2008
2009
2010

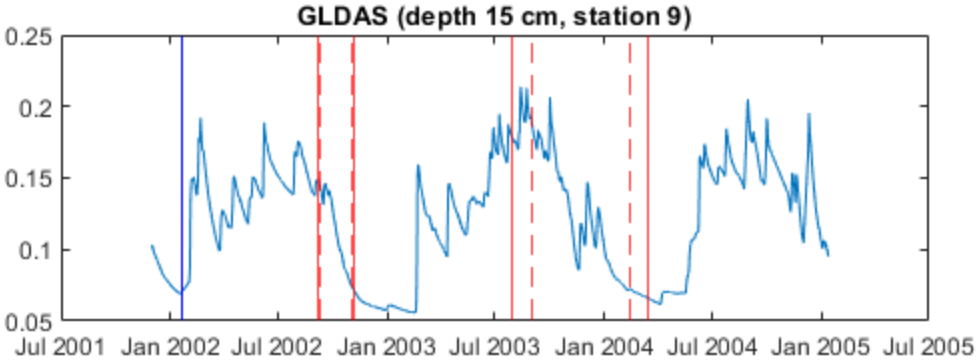

Oznet (depth 15 cm, station 7)
0.2
0.15
0.1
0.05
2002
2004
2006
2008
2010
2012

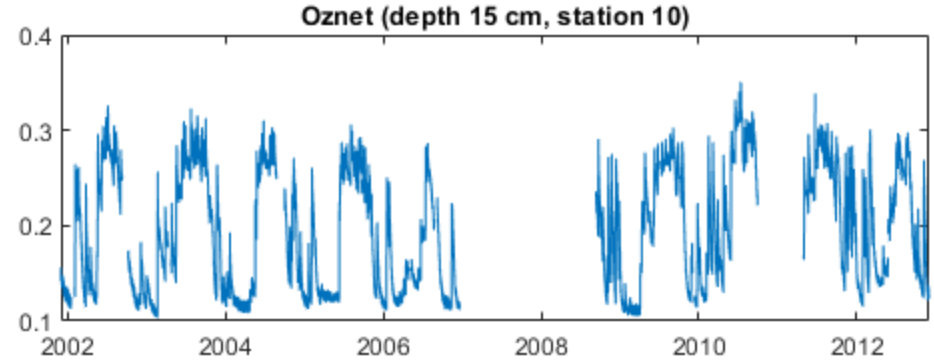

GLDAS (depth 15 cm, station 7)
0.25
0.2
0.15
0.1
0.05
2002
2004
2006
2008
2010
2012

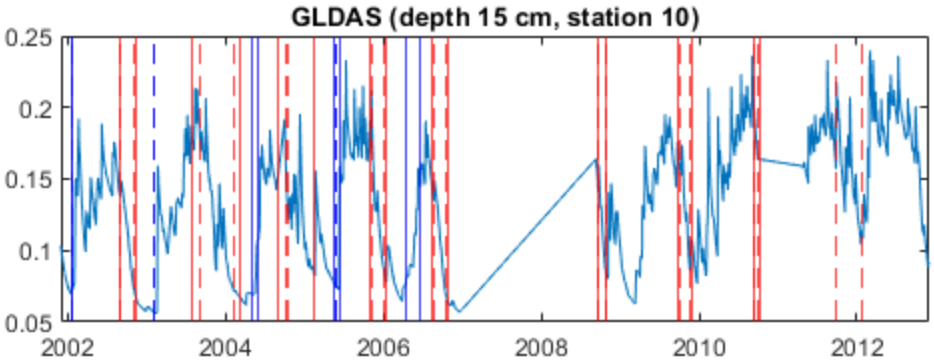

Oznet (depth 15 cm, station 8)
0.4
0.35
0.3
0.25
0.2
2003
2004
2005
2006
2007
2008
2009

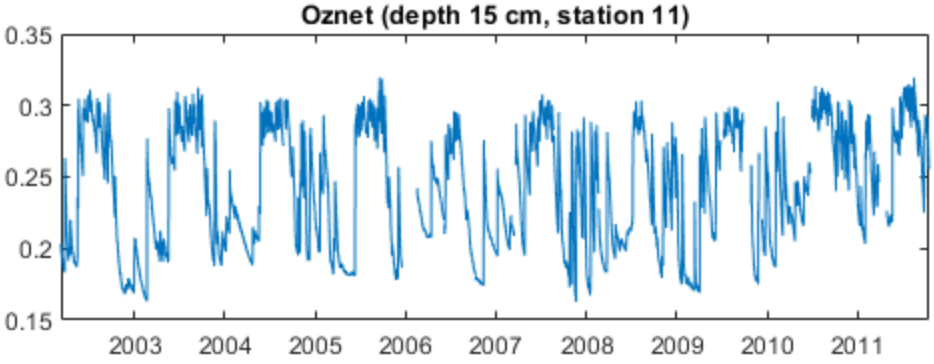

GLDAS (depth 15 cm, station 8)
0.25
0.2
0.15
0.1
0.05
2003
2004
2005
2006
2007
2008
2009

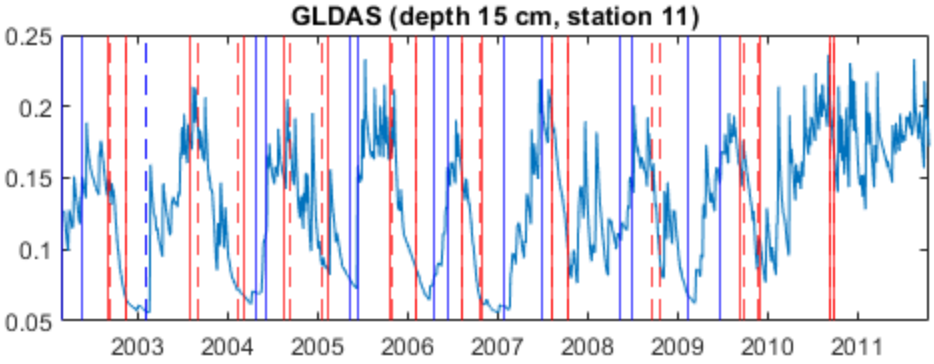

Oznet (depth 15 cm, station 9)
0.3
0.2
0.1
0
Jul 2001
Jan 2002
Jul 2002
Jan 2003
Jul 2003
Jan 2004
Jul 2004
Jan 2005
Jul 2005

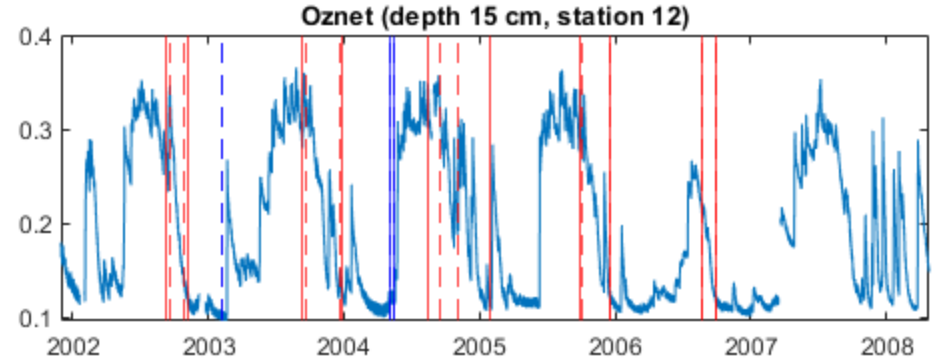

GLDAS (depth 15 cm, station 9)
0.25
0.2
0.15
0.1
0.05
Jul 2001
Jan 2002
Jul 2002
Jan 2003
Jul 2003
Jan 2004
Jul 2004
Jan 2005
Jul 2005

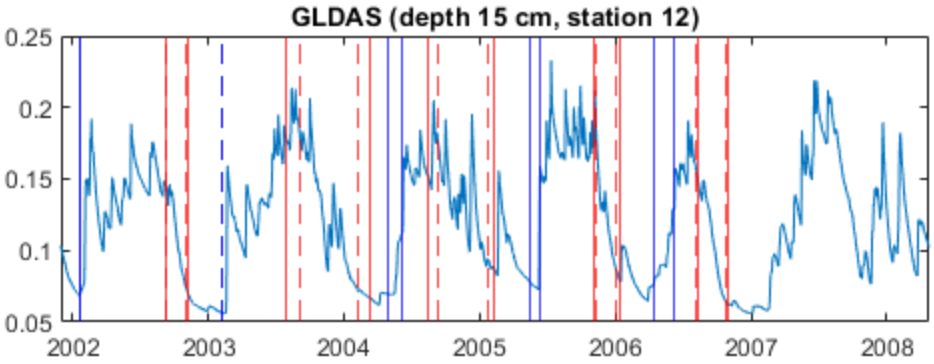

Oznet (depth 15 cm, station 10)
0.4
0.3
0.2
0.1
2002
2004
2006
2008
2010
2012

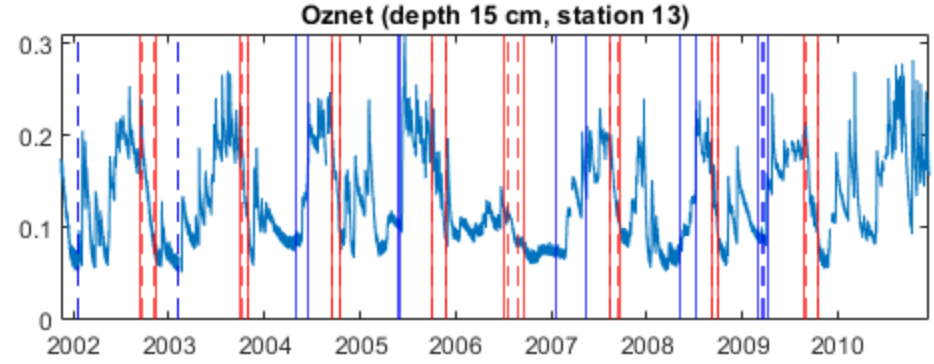

GLDAS (depth 15 cm, station 10)
0.25
0.2
0.15
0.1
0.05
2002
2004
2006
2008
2010
2012

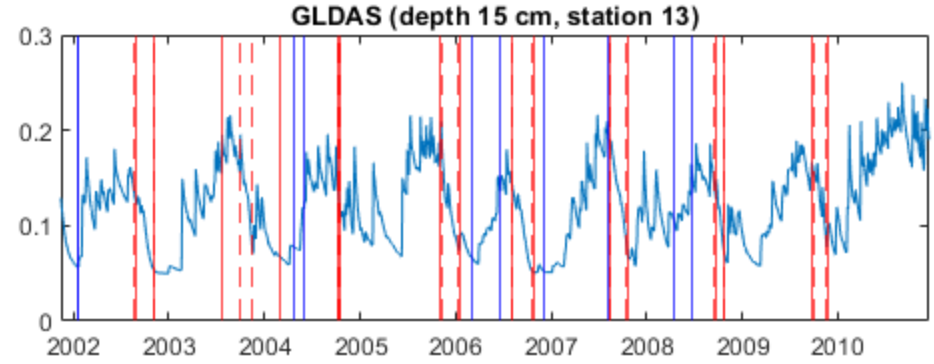

Oznet (depth 15 cm, station 11)
0.35
0.3
0.25
0.2
0.15
2003
2004
2005
2006
2007
2008
2009
2010
2011

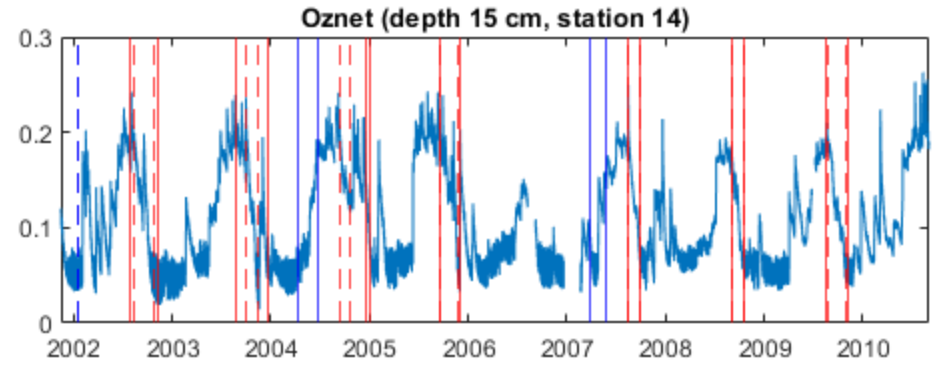

GLDAS (depth 15 cm, station 11)
0.25
0.2
0.15
0.1
0.05
2003
2004
2005
2006
2007
2008
2009
2010
2011

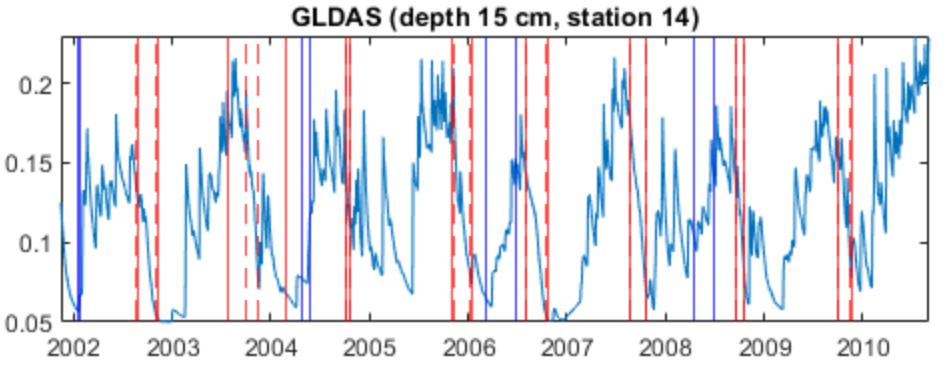

Oznet (depth 15 cm, station 12)
0.4
0.3
0.2
0.1
2002
2003
2004
2005
2006
2007
2008

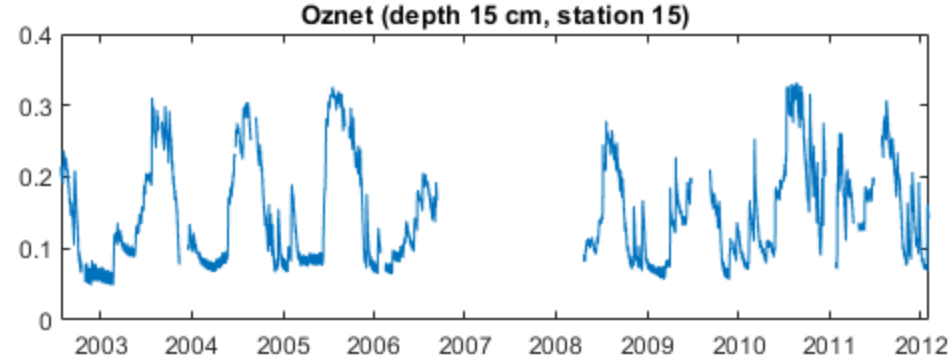

GLDAS (depth 15 cm, station 12)
0.25
0.2
0.15
0.1
0.05
2002
2003
2004
2005
2006
2007
2008

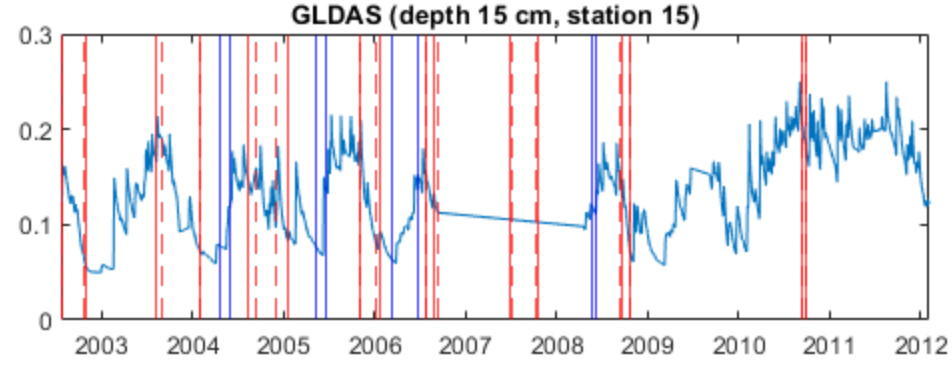

Oznet (depth 15 cm, station 13)
0.3
0.2
0.1
0
2002
2003
2004
2005
2006
2007
2008
2009
2010

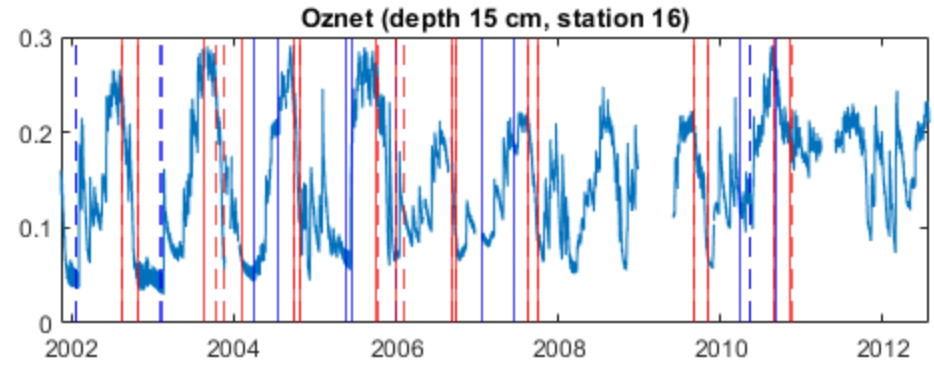

GLDAS (depth 15 cm, station 13)
0.3
0.2
0.1
0
2002
2003
2004
2005
2006
2007
2008
2009
2010

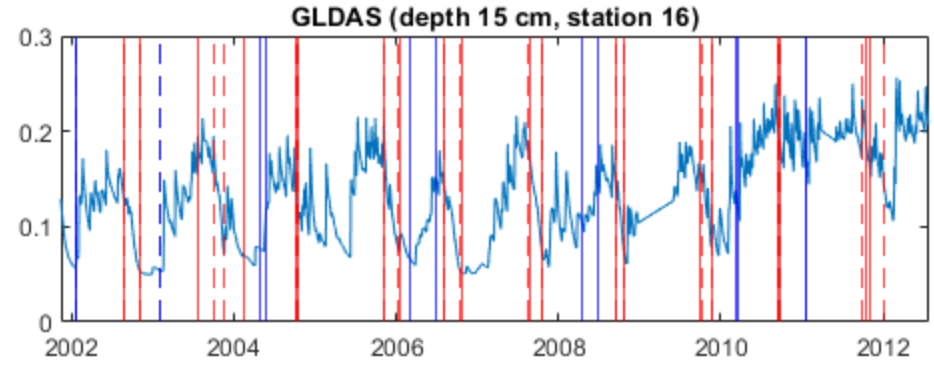

Oznet (depth 15 cm, station 14)
0.3
0.2
0.1
0
2002
2003
2004
2005
2006
2007
2008
2009
2010

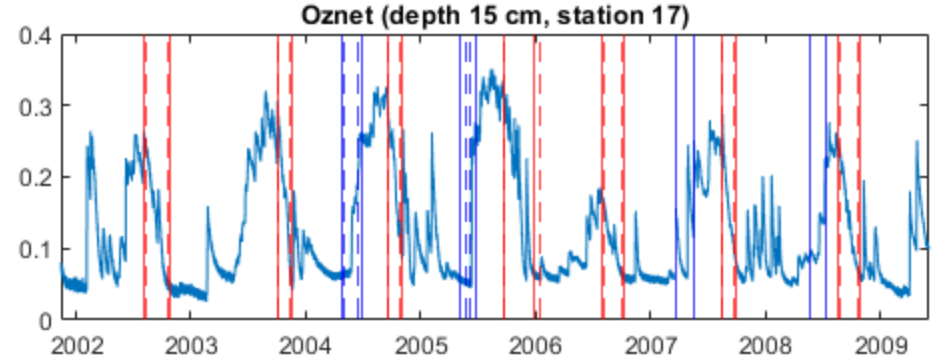

GLDAS (depth 15 cm, station 14)
0.2
0.15
0.1
0.05
2002
2003
2004
2005
2006
2007
2008
2009
2010

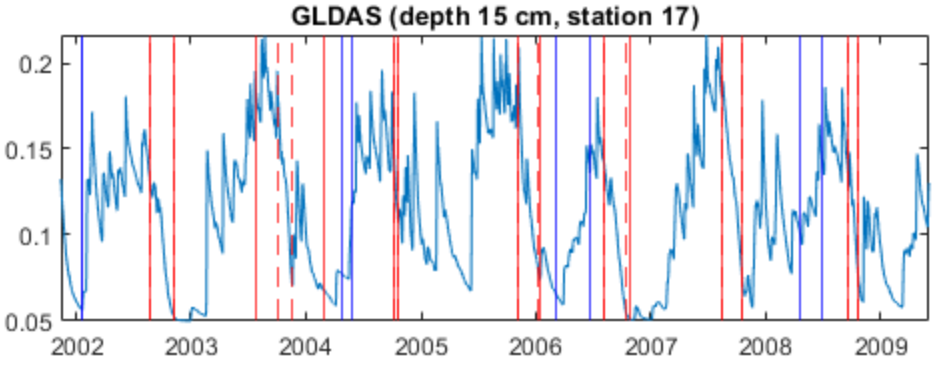

Oznet (depth 15 cm, station 15)
0.4
0.3
0.2
0.1
0
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012

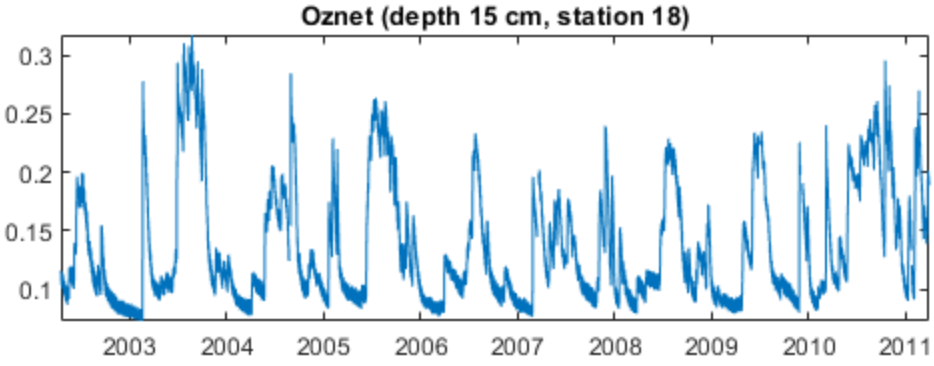

GLDAS (depth 15 cm, station 15)
0.3
0.2
0.1
0
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012

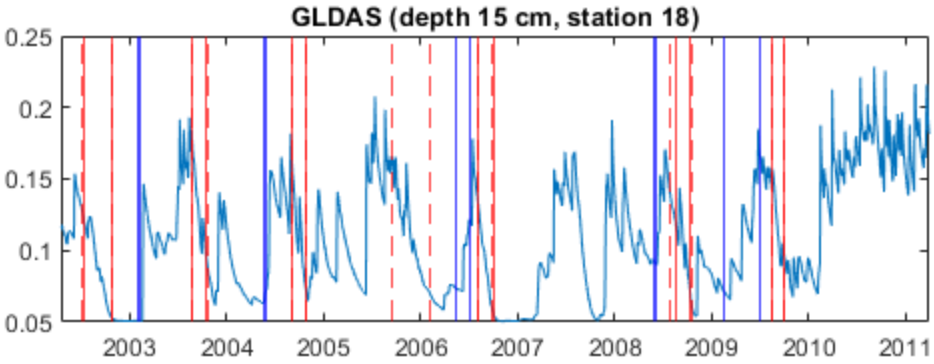

Oznet (depth 15 cm, station 16)
0.3
0.2
0.1
0
2002
2004
2006
2008
2010
2012

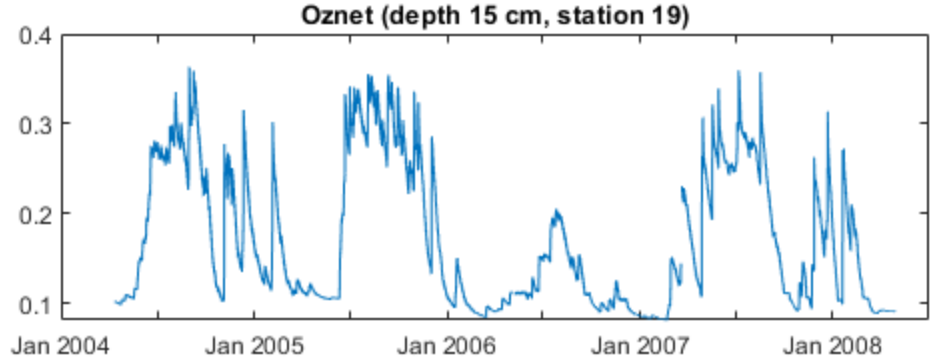

GLDAS (depth 15 cm, station 16)
0.3
0.2
0.1
0
2002
2004
2006
2008
2010
2012

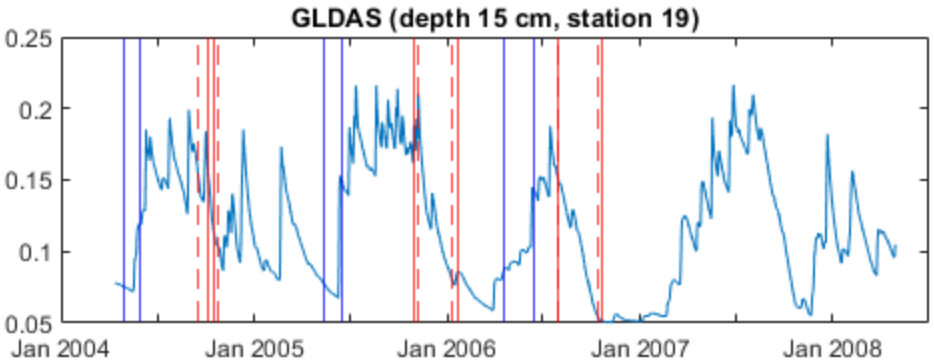

Oznet (depth 15 cm, station 17)
0.4
0.3
0.2
0.1
0
2002
2003
2004
2005
2006
2007
2008
2009

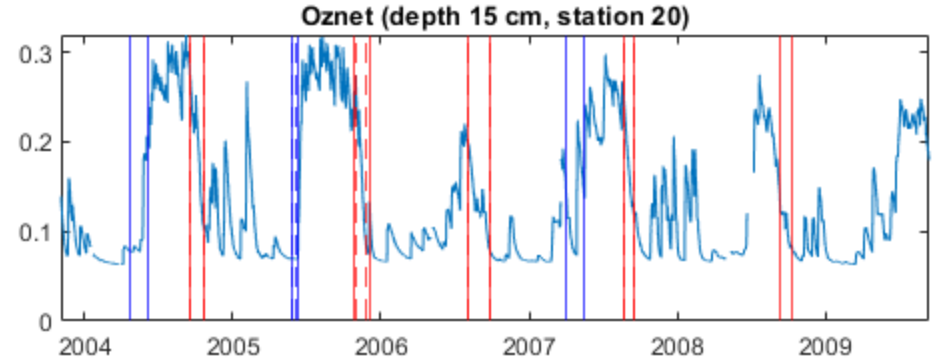

GLDAS (depth 15 cm, station 17)
0.2
0.15
0.1
0.05
2002
2003
2004
2005
2006
2007
2008
2009

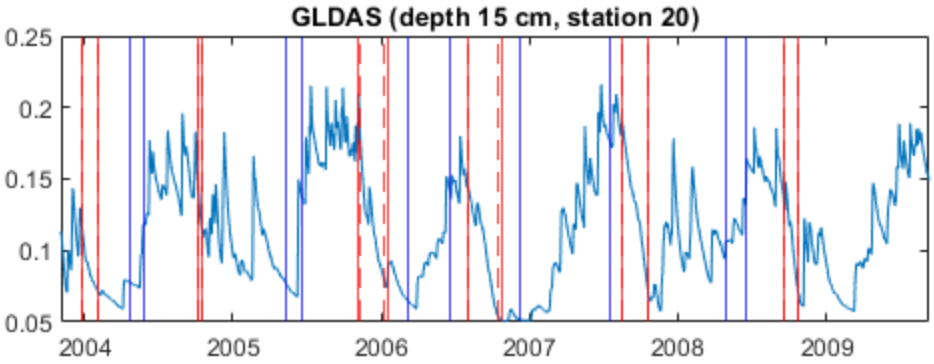

Oznet (depth 15 cm, station 18)
0.3
0.25
0.2
0.15
0.1
2003
2004
2005
2006
2007
2008
2009
2010
2011

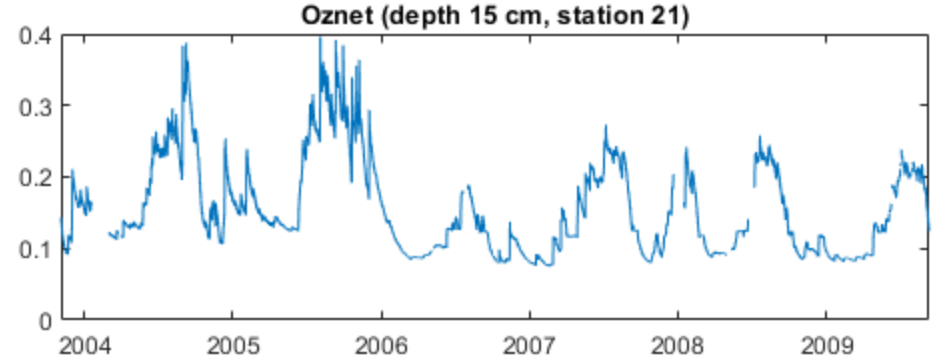

GLDAS (depth 15 cm, station 18)
0.25
0.2
0.15
0.1
0.05
2003
2004
2005
2006
2007
2008
2009
2010
2011

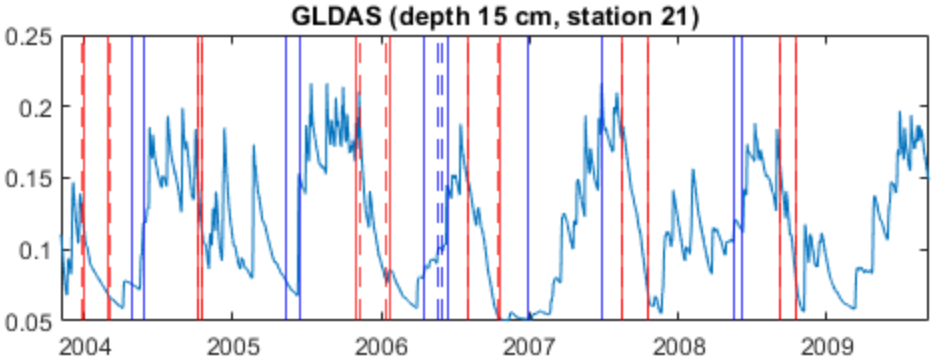

Oznet (depth 15 cm, station 19)
0.4
0.3
0.2
0.1
Jan 2004
Jan 2005
Jan 2006
Jan 2007
Jan 2008

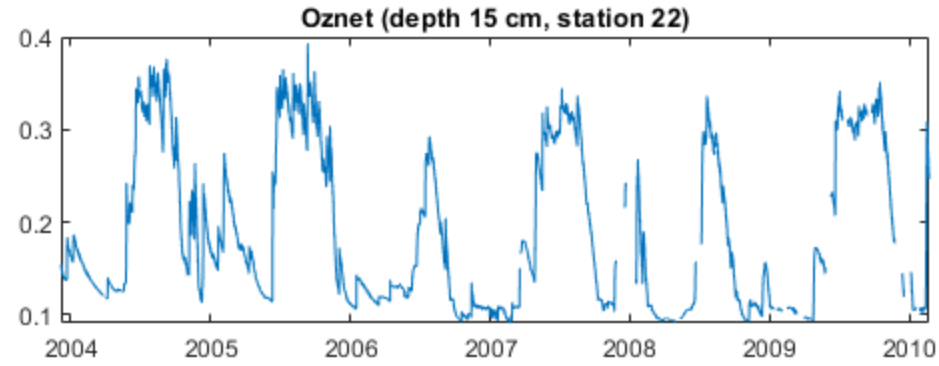

GLDAS (depth 15 cm, station 19)
0.25
0.2
0.15
0.1
0.05
Jan 2004
Jan 2005
Jan 2006
Jan 2007
Jan 2008

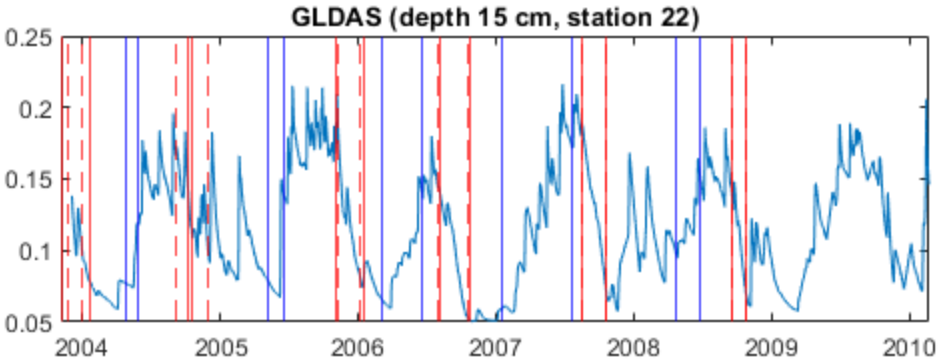

Oznet (depth 15 cm, station 20)
0.3
0.2
0.1
0
2004
2005
2006
2007
2008
2009

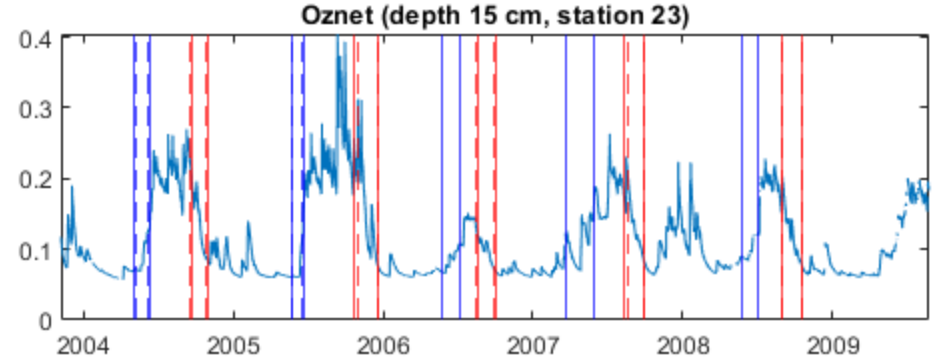

GLDAS (depth 15 cm, station 20)
0.25
0.2
0.15
0.1
0.05
2004
2005
2006
2007
2008
2009

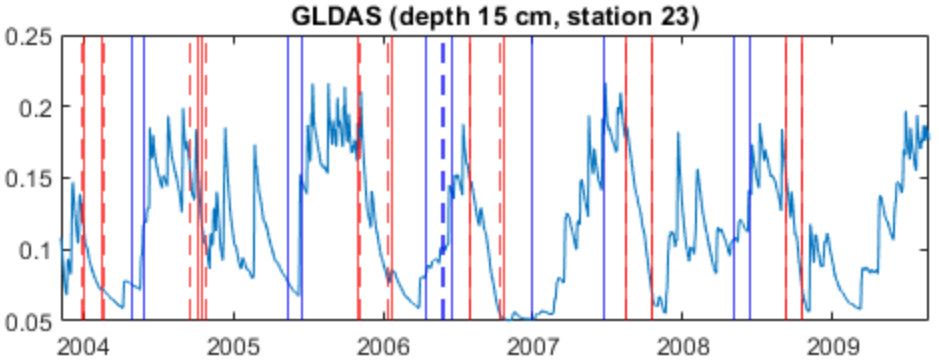

Oznet (depth 15 cm, station 21)
0.4
0.3
0.2
0.1
0
2004
2005
2006
2007
2008
2009

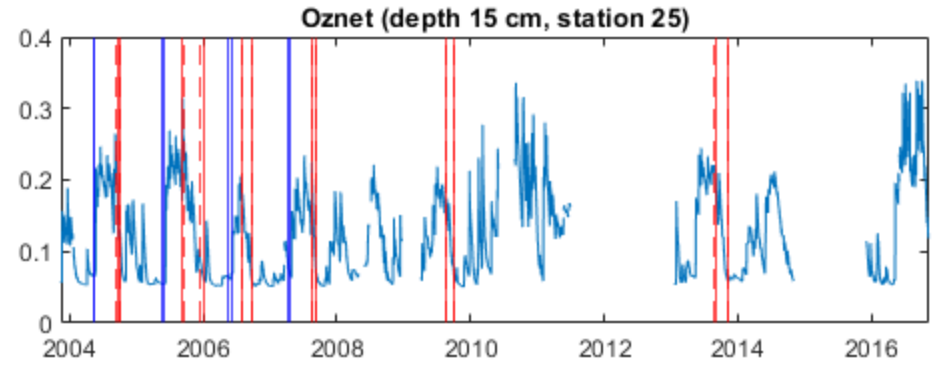

GLDAS (depth 15 cm, station 21)
0.25
0.2
0.15
0.1
0.05
2004
2005
2006
2007
2008
2009

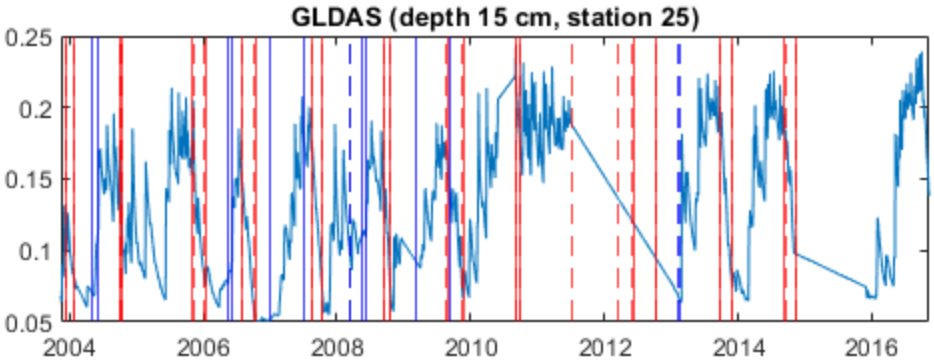

Oznet (depth 15 cm, station 22)
0.4
0.3
0.2
0.1
2004
2005
2006
2007
2008
2009
2010

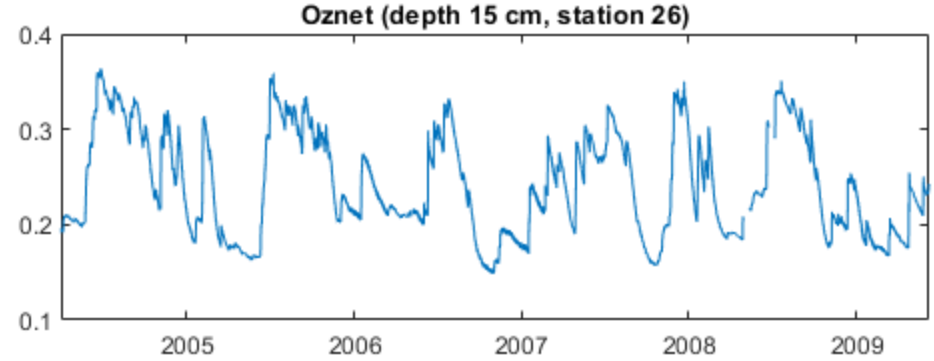

GLDAS (depth 15 cm, station 22)
0.25
0.2
0.15
0.1
0.05
2004
2005
2006
2007
2008
2009
2010

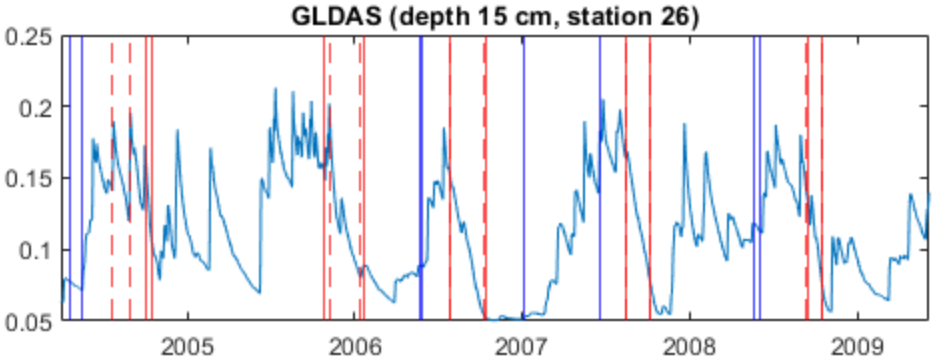

Oznet (depth 15 cm, station 23)
0.4
0.3
0.2
0.1
0
2004
2005
2006
2007
2008
2009

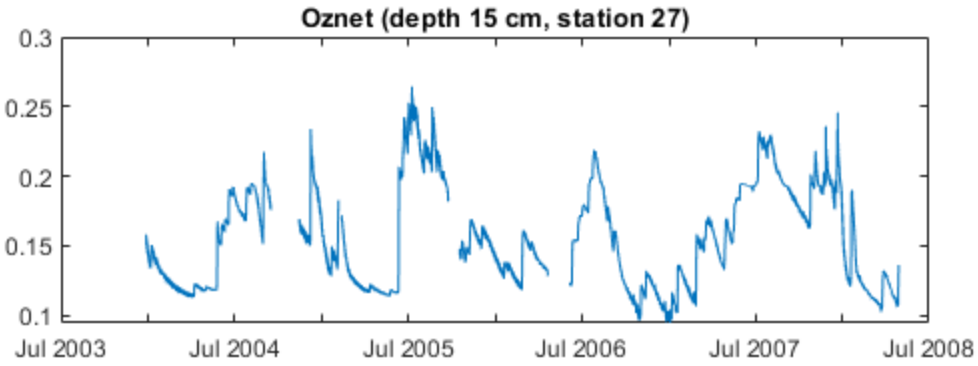

GLDAS (depth 15 cm, station 23)
0.25
0.2
0.15
0.1
0.05
2004
2005
2006
2007
2008
2009

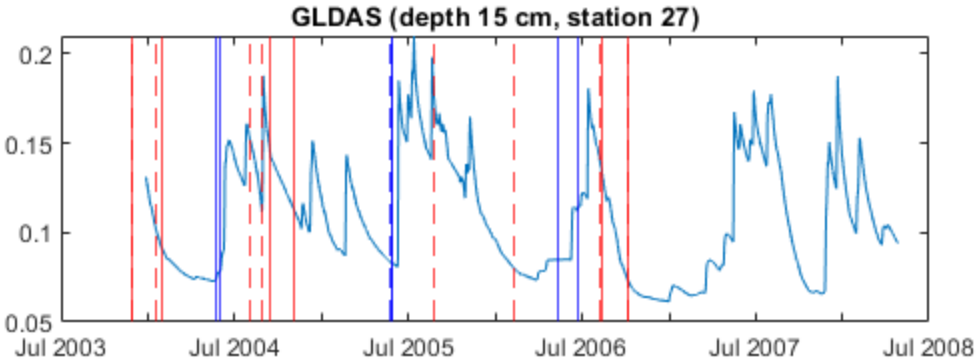

Oznet (depth 15 cm, station 25)
0.4
0.3
0.2
0.1
0
2004
2006
2008
2010
2012
2014
2016

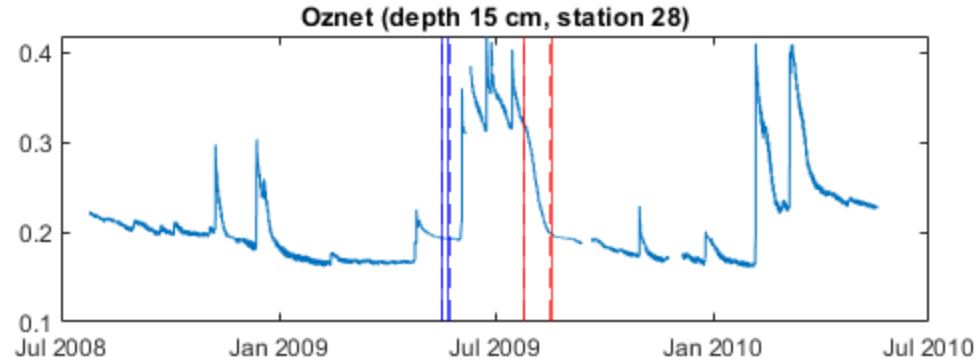

GLDAS (depth 15 cm, station 25)
0.25
0.2
0.15
0.1
0.05
2004
2006
2008
2010
2012
2014
2016

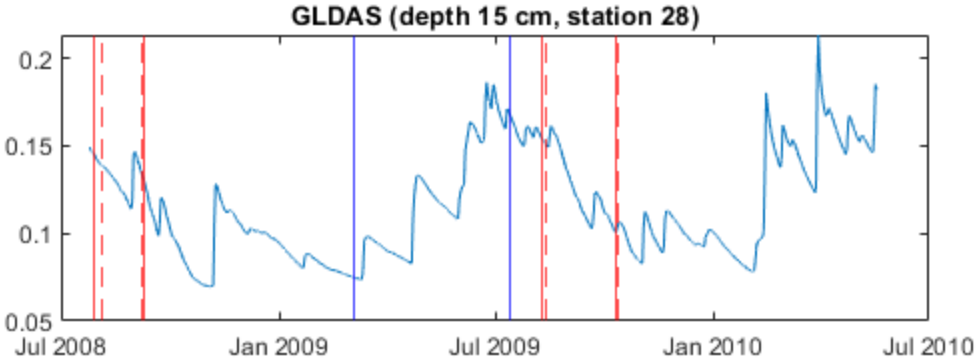

Oznet (depth 15 cm, station 26)
0.4
0.3
0.2
0.1
2005
2006
2007
2008
2009

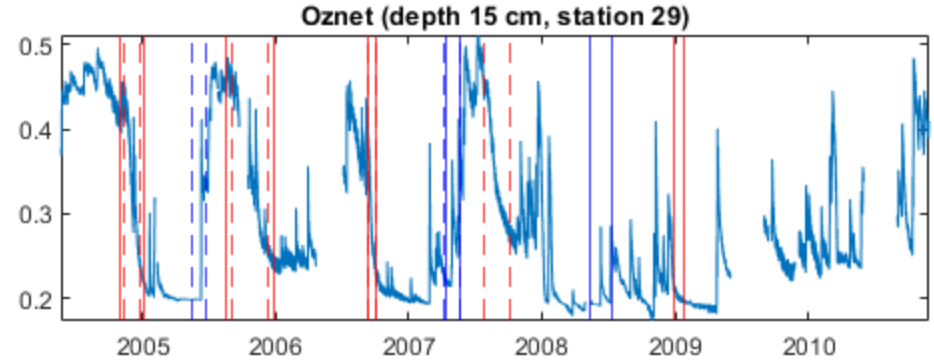

GLDAS (depth 15 cm, station 26)
0.25
0.2
0.15
0.1
0.05
2005
2006
2007
2008
2009

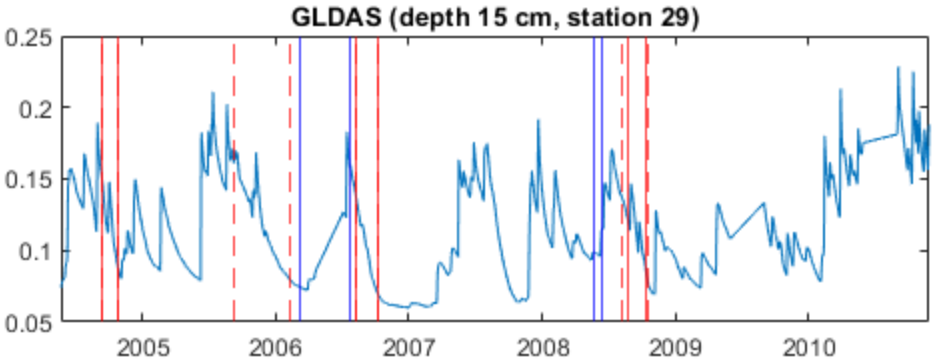

Oznet (depth 15 cm, station 27)
0.3
0.25
0.2
0.15
0.1
Jul 2003
Jul 2004
Jul 2005
Jul 2006
Jul 2007
Jul 2008

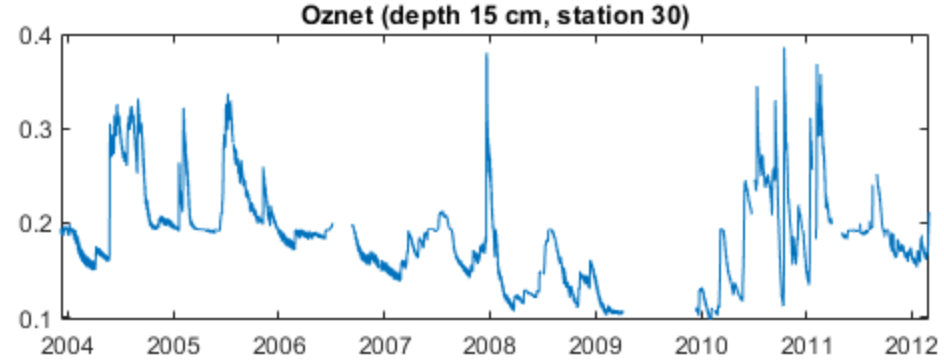

GLDAS (depth 15 cm, station 27)
0.2
0.15
0.1
0.05
Jul 2003
Jul 2004
Jul 2005
Jul 2006
Jul 2007
Jul 2008

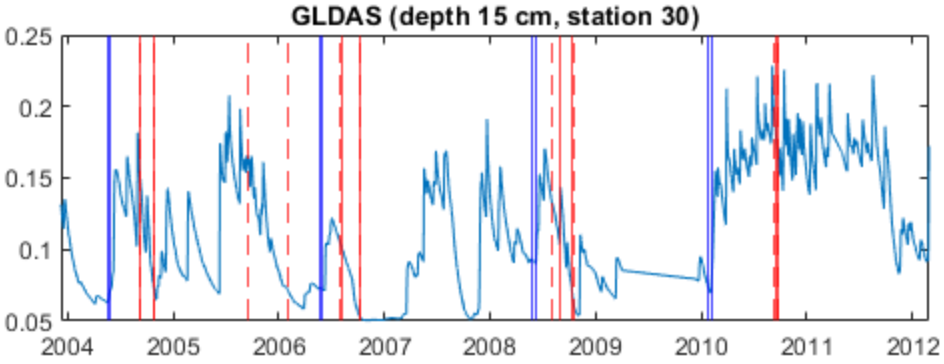

Oznet (depth 15 cm, station 28)
0.4
0.3
0.2
0.1
Jul 2008
Jan 2009
Jul 2009
Jan 2010
Jul 2010

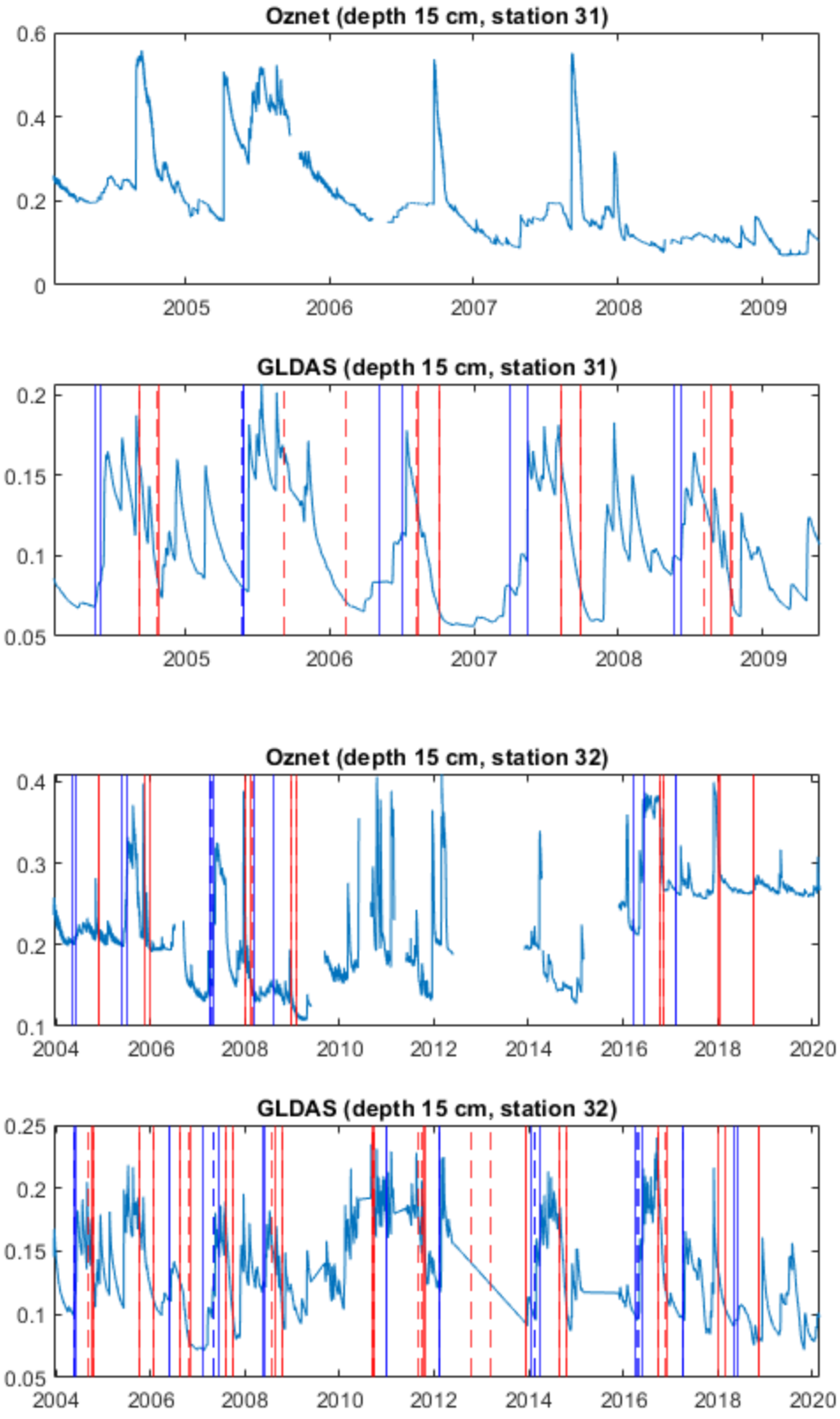

GLDAS (depth 15 cm, station 28)
0.2
0.15
0.1
0.05
Jul 2008
Jan 2009
Jul 2009
Jan 2010
Jul 2010

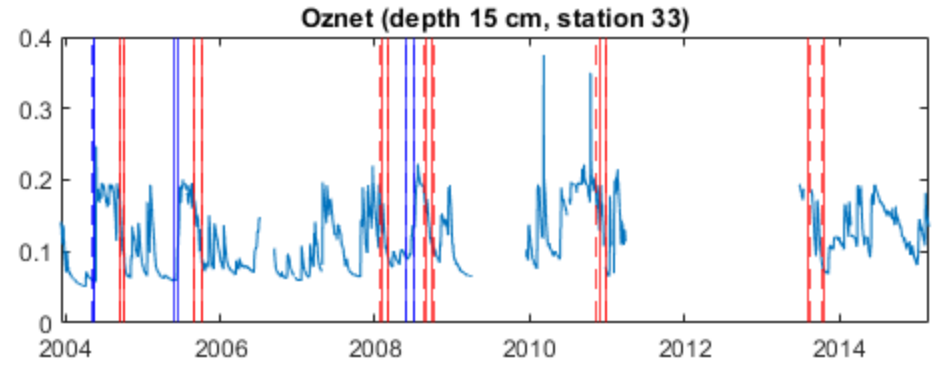

Oznet (depth 15 cm, station 29)
0.5
0.4
0.3
0.2
2005
2006
2007
2008
2009
2010

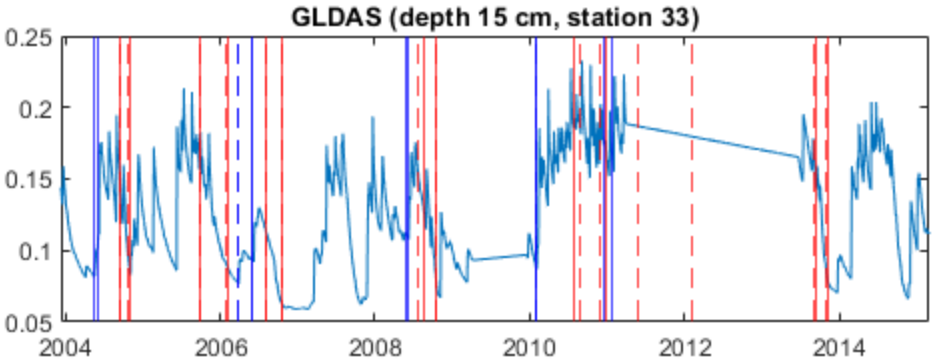

GLDAS (depth 15 cm, station 29)
0.25
0.2
0.15
0.1
0.05
2005
2006
2007
2008
2009
2010

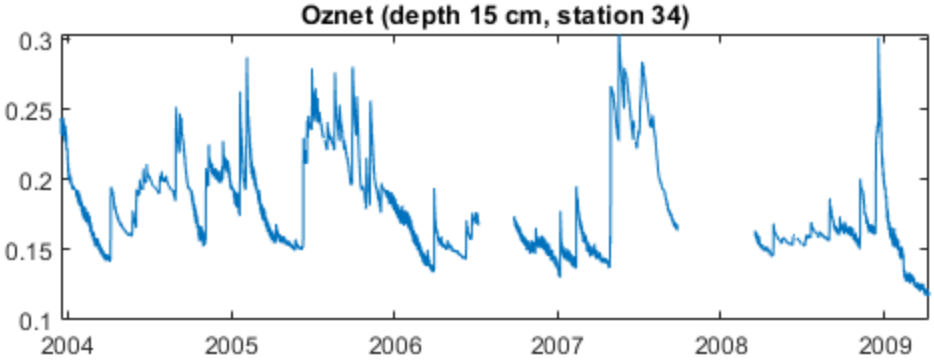

Oznet (depth 15 cm, station 30)
0.4
0.3
0.2
0.1
2004
2005
2006
2007
2008
2009
2010
2011
2012

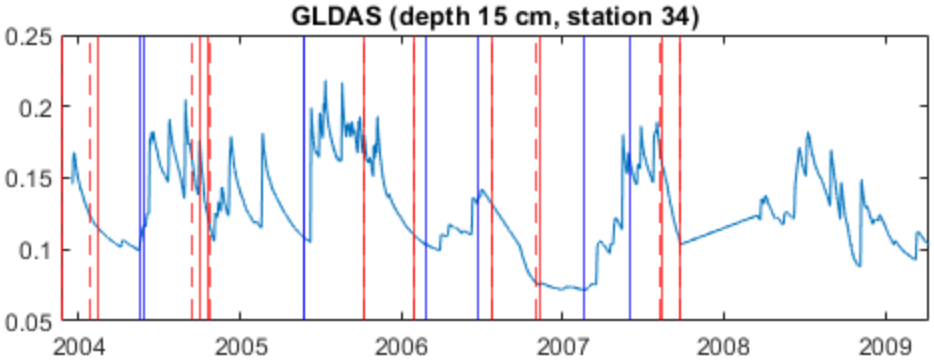

GLDAS (depth 15 cm, station 30)
0.25
0.2
0.15
0.1
0.05
2004
2005
2006
2007
2008
2009
2010
2011
2012

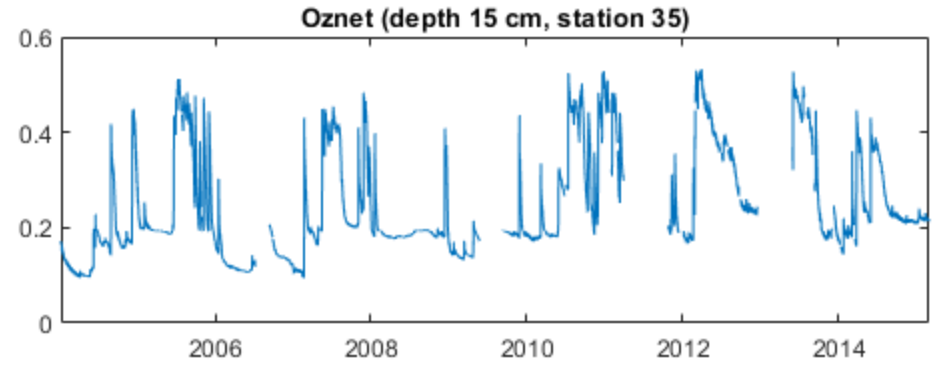

Oznet (depth 15 cm, station 31)
0.6
0.4
0.2
0
2005
2006
2007
2008
2009
GLDAS (depth 15 cm, station 31)
0.2
0.15
0.1
0.05
2005
2006
2007
2008
2009
Oznet (depth 15 cm, station 32)
0.4
0.3
0.2
0.1
2004
2006
2008
2010
2012
2014
2016
2018
2020
GLDAS (depth 15 cm, station 32)
0.25
0.2
0.15
0.1
0.05
2004
2006
2008
2010
2012
2014
2016
2018
2020

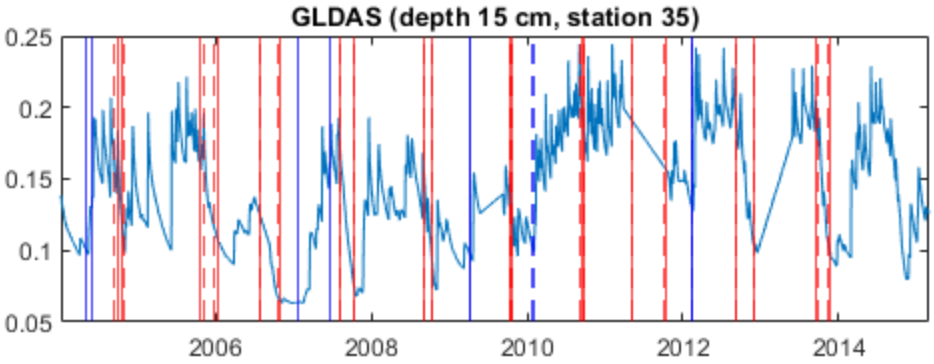

Oznet (depth 15 cm, station 33)
0.4
0.3
0.2
0.1
0
2004
2006
2008
2010
2012
2014

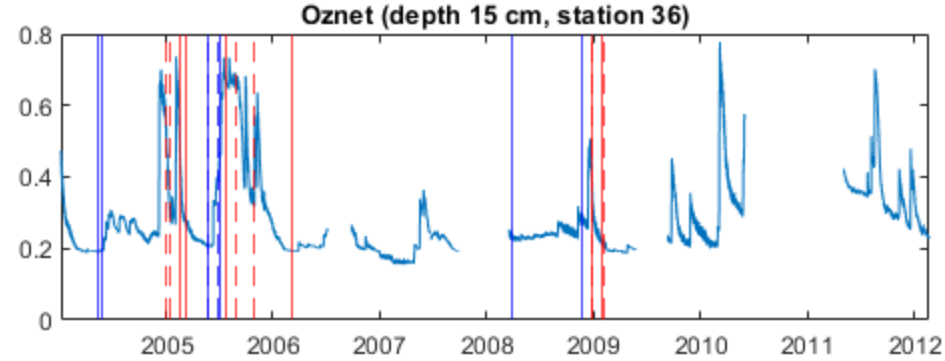

GLDAS (depth 15 cm, station 33)
0.25
0.2
0.15
0.1
0.05
2004
2006
2008
2010
2012
2014

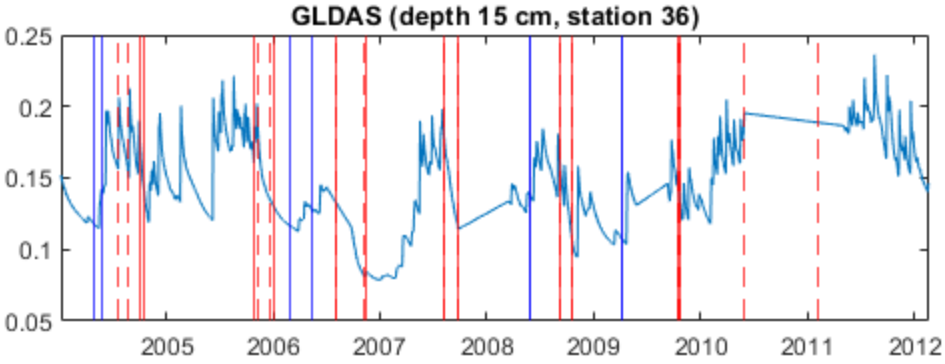

Oznet (depth 15 cm, station 34)
0.3
0.25
0.2
0.15
0.1
2004
2005
2006
2007
2008
2009

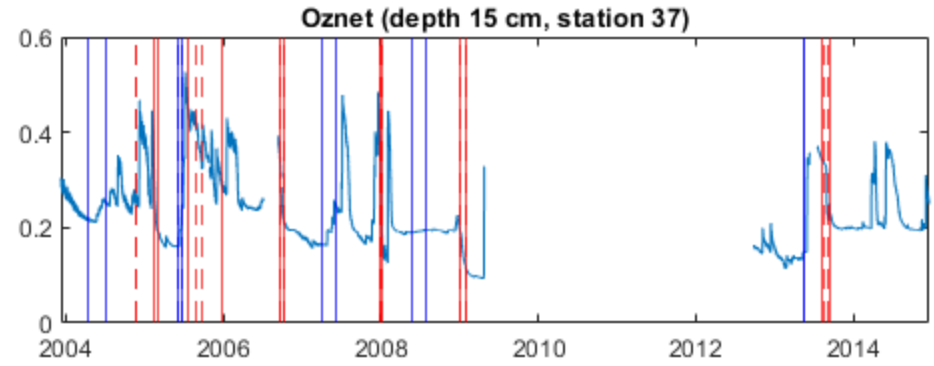

GLDAS (depth 15 cm, station 34)
0.25
0.2
0.15
0.1
0.05
2004
2005
2006
2007
2008
2009

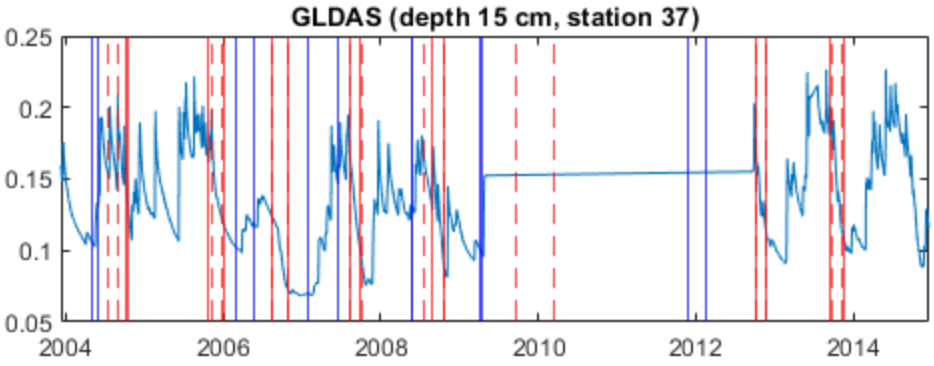

Oznet (depth 15 cm, station 35)
0.6
0.4
0.2
0
2006
2008
2010
2012
2014

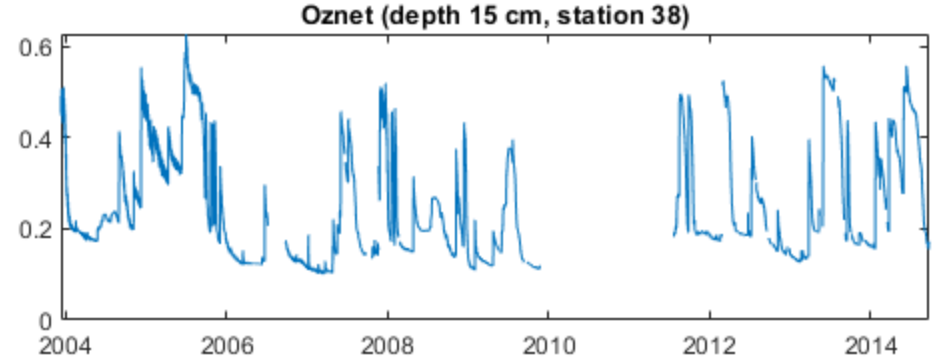

GLDAS (depth 15 cm, station 35)
0.25
0.2
0.15
0.1
0.05
2006
2008
2010
2012
2014

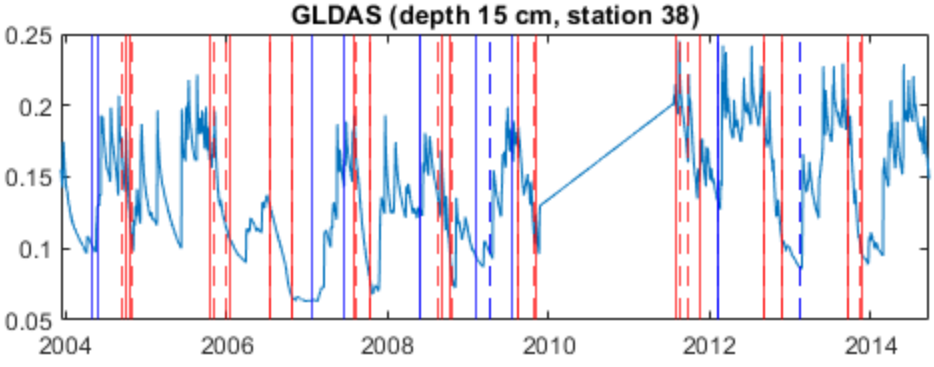

Oznet (depth 15 cm, station 36)
0.8
0.6
0.4
0.2
0
2005
2006
2007
2008
2009
2010
2011
2012


GLDAS (depth 15 cm, station 36)
0.25
0.2
0.15
0.1
0.05
2005
2006
2007
2008
2009
2010
2011
2012


Oznet (depth 15 cm, station 37)
0.6
0.4
0.2
0
2004
2006
2008
2010
2012
2014


GLDAS (depth 15 cm, station 37)
0.25
0.2
0.15
0.1
0.05
2004
2006
2008
2010
2012
2014


Oznet (depth 15 cm, station 38)
0.6
0.4
0.2
0
2004
2006
2008
2010
2012
2014


GLDAS (depth 15 cm, station 38)
0.25
0.2
0.15
0.1
0.05
2004
2006
2008
2010
2012
2014

```
        end

         % plot the times series of data

         % if the depth/station has the GLDAS/Oznet data,

             % plot the seasonal transition timings (Piecewise)

             % plot the seasonal transition timings (Logistic)
    end

     % if both GLDAS/Oznet has the data, find the close wet/drying seasons (within 50days of error
or something?) and take the residuals

     % save them as output
```

```
fid =

     3


fid =

     3


fid =

     3


fid =

     3


fid =

     3


fid =

     3


fid =

     3


fid =
```

```
     3

fid =

     3

fid =

     3

fid =

     3

fid =

     3

fid =

     3

fid =

     3

fid =

     3

fid =

     3

fid =

     3

fid =

     3
```

```
fid =

     3


fid =

     3


fid =

     3


fid =

     3


fid =

     3


fid =

     3
```

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