Drought analysis in Vistula basin based on EOBS data

HUMDROUGHT Project

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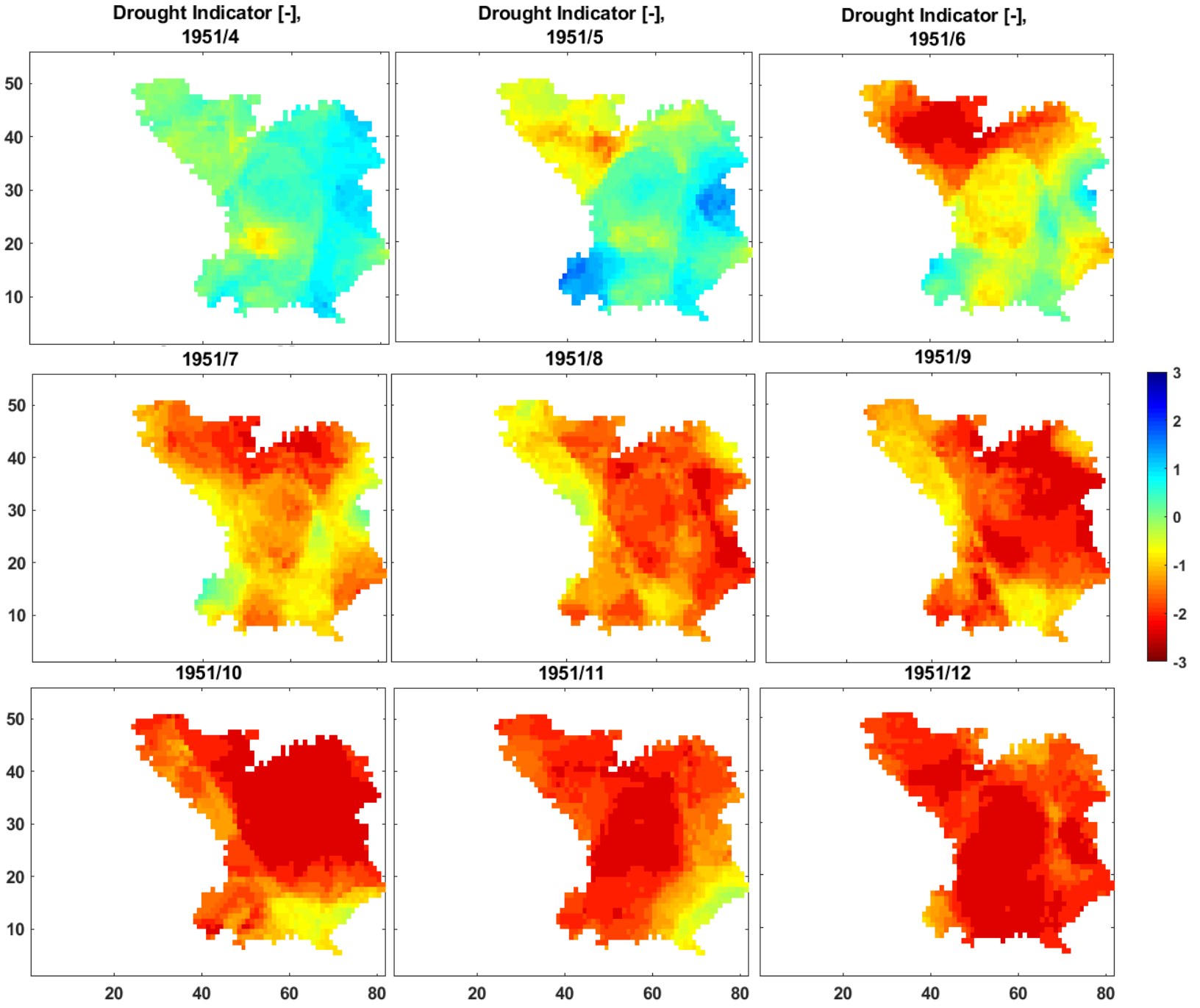
EOBS 20.0e

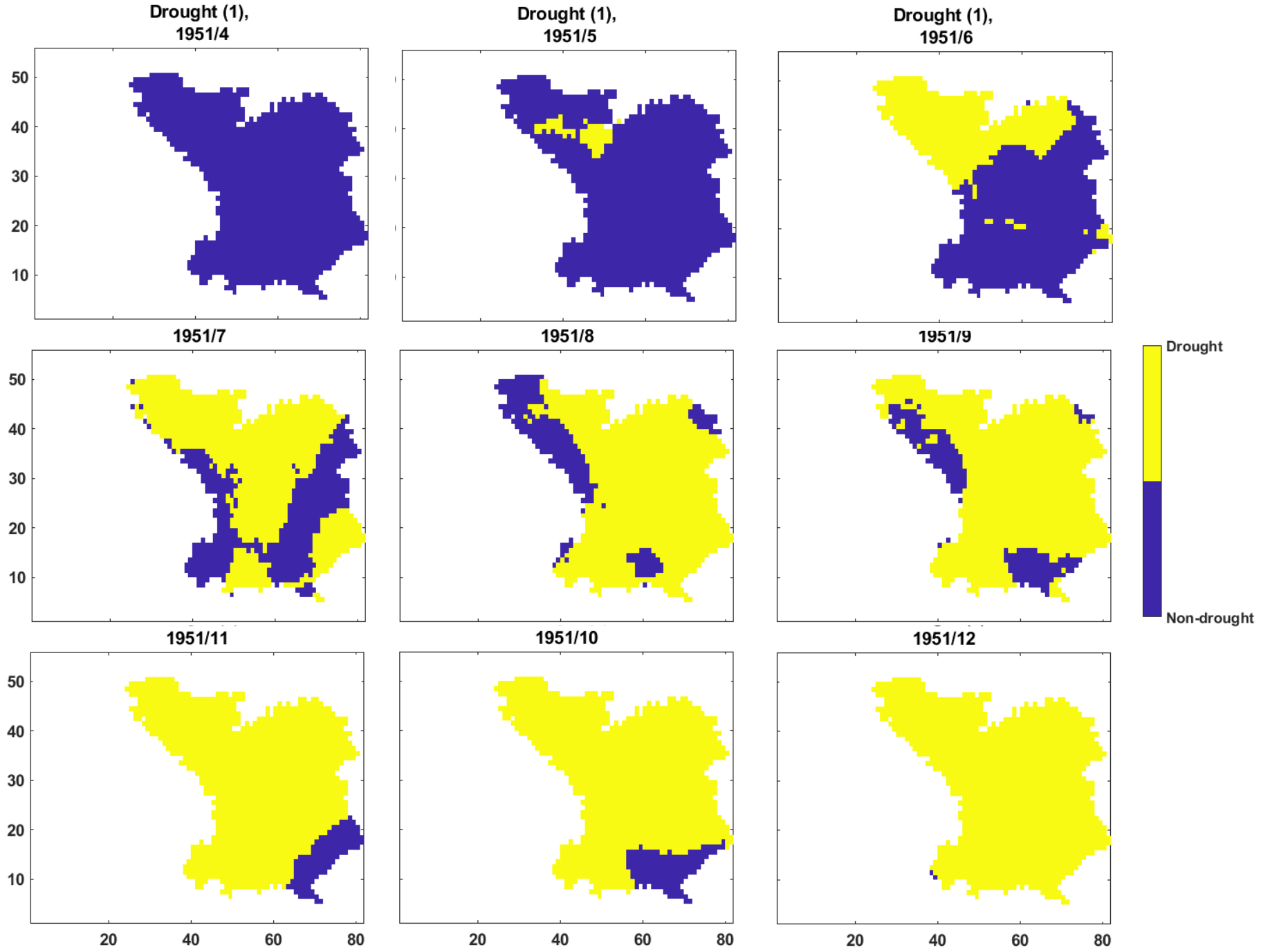
- Data spatial resolution - 0.1 x 0.1 deg >> 11.1 x 11.1 km
- Data time resolution - daily

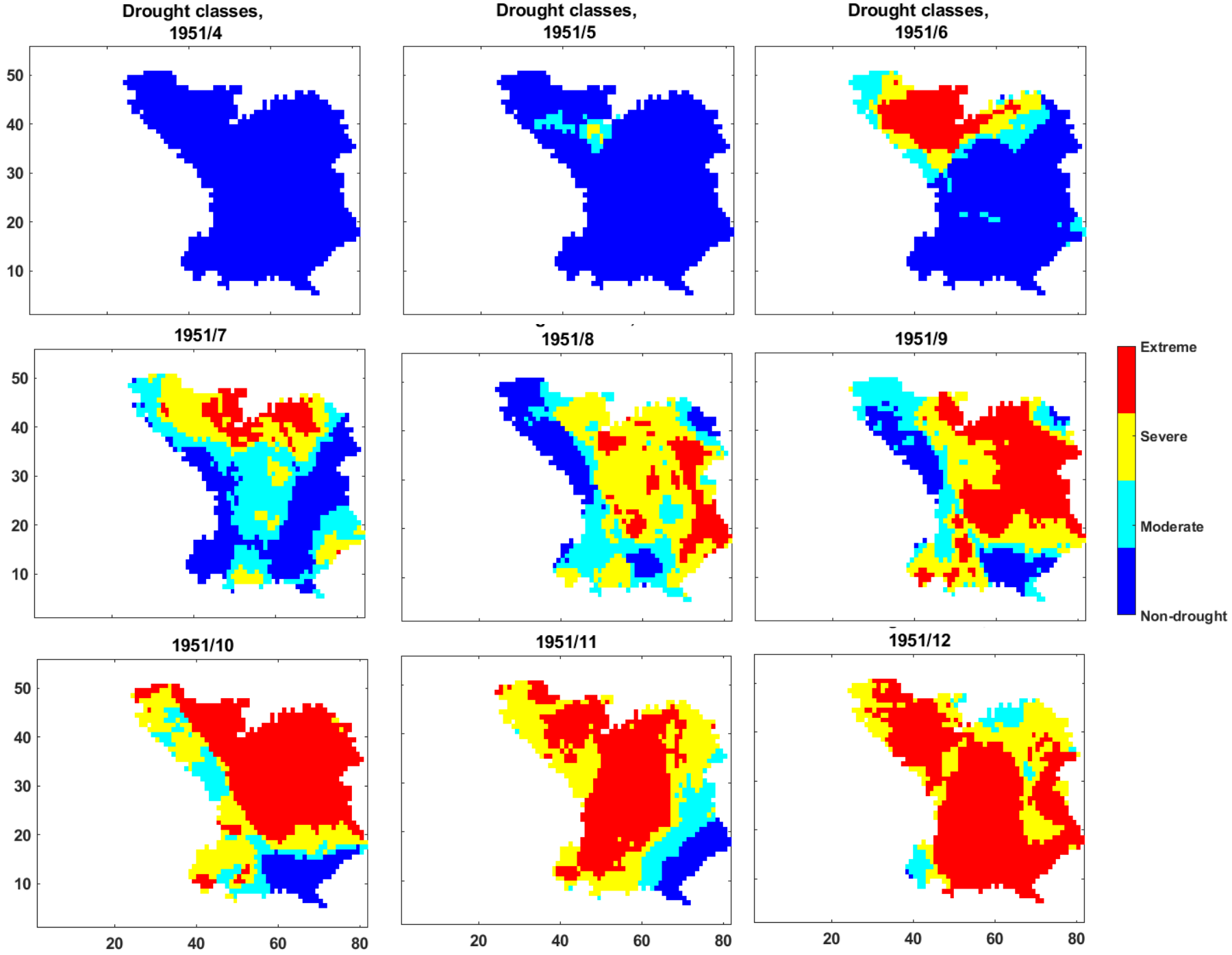
2020	Ensemble median	Ensemble spread
0.1 deg. regular grid	TG TN TX RR PP	TG TN TX RR PP
0.25 deg. regular grid	TG TN TX RR PP	TG TN TX RR PP
2019	**Ensemble median**	**Ensemble spread**
0.1 deg. regular grid	TG TN TX RR PP QQ	TG TN TX RR PP QQ
0.25 deg. regular grid	TG TN TX RR PP QQ	TG TN TX RR PP QQ

TG – avarage daily temperature
TN – minimum daily temperature
TX – maximum daily tempearture
RR – precipitation
PP -

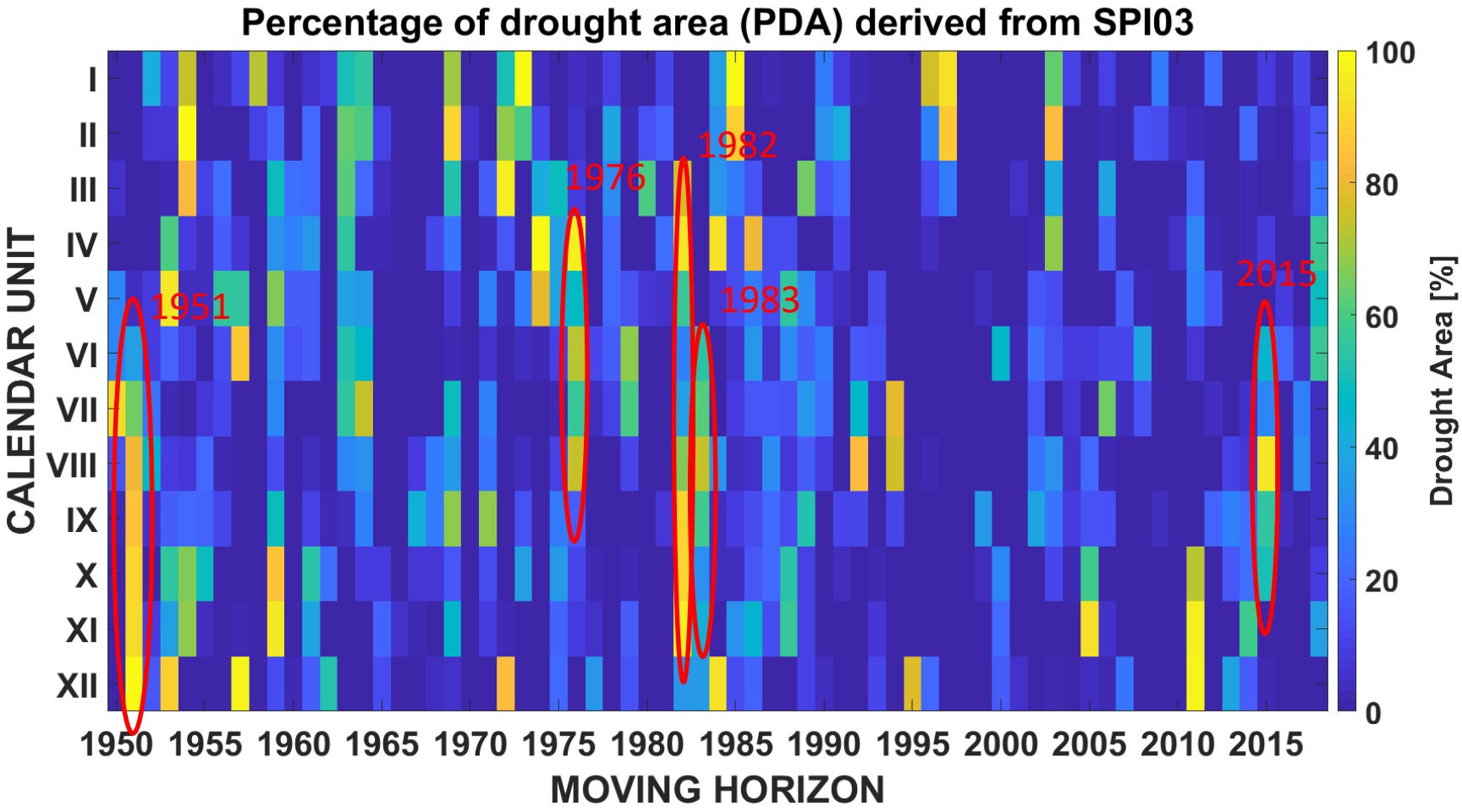
Case study: Poland (Vistula basin)
Drought indicator (DI): SPI-03



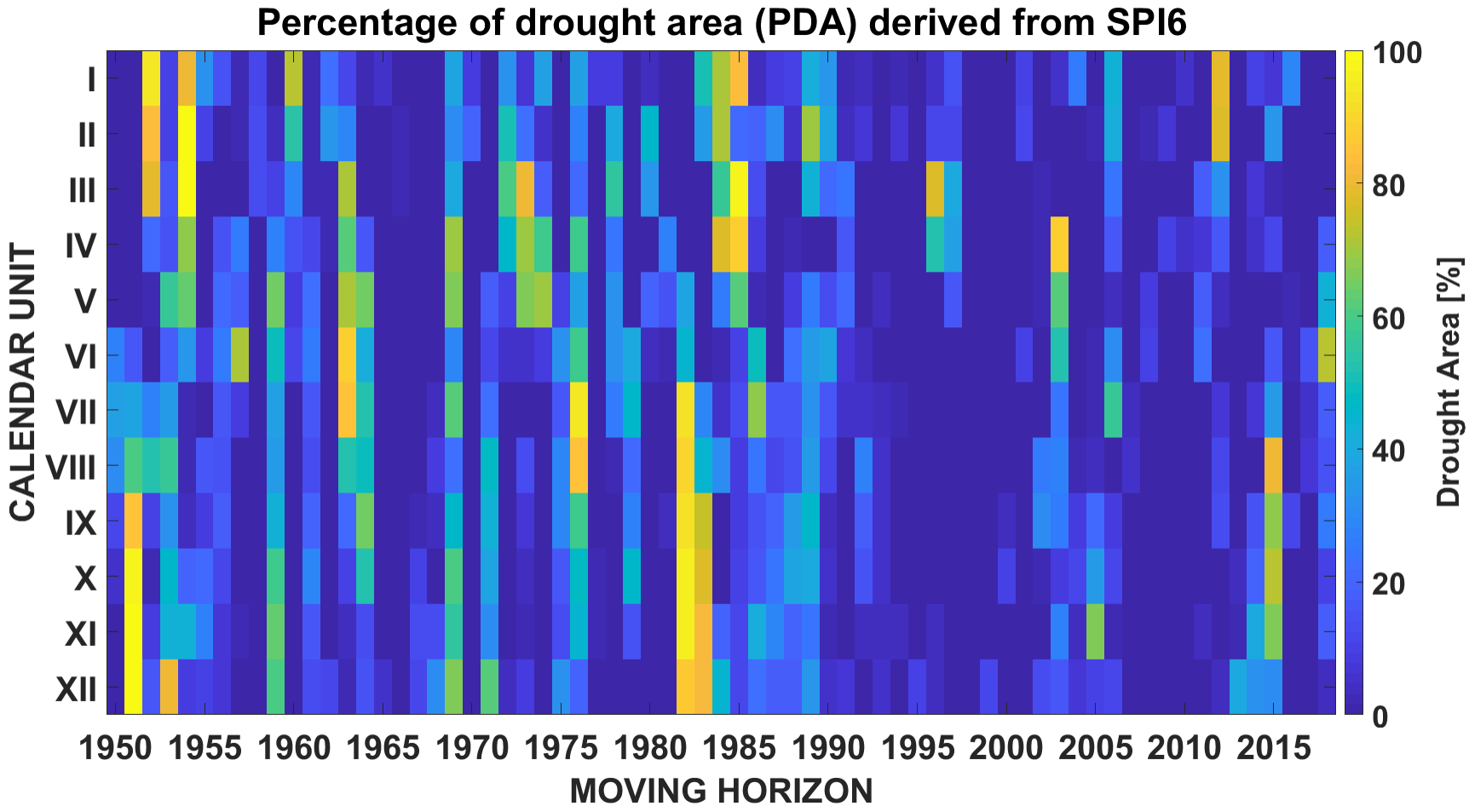

Drought (1), 1951/4
Drought (1), 1951/5
Drought (1), 1951/6
1951/7
1951/8
1951/9
1951/11
1951/10
1951/12
Drought
Non-drought
50
40
30
20
10
20
40
60
80


Drought classes,
1951/4
Drought classes,
1951/5
Drought classes,
1951/6
1951/7
1951/8
1951/9
1951/10
1951/11
1951/12
Extreme
Severe
Moderate
Non-drought

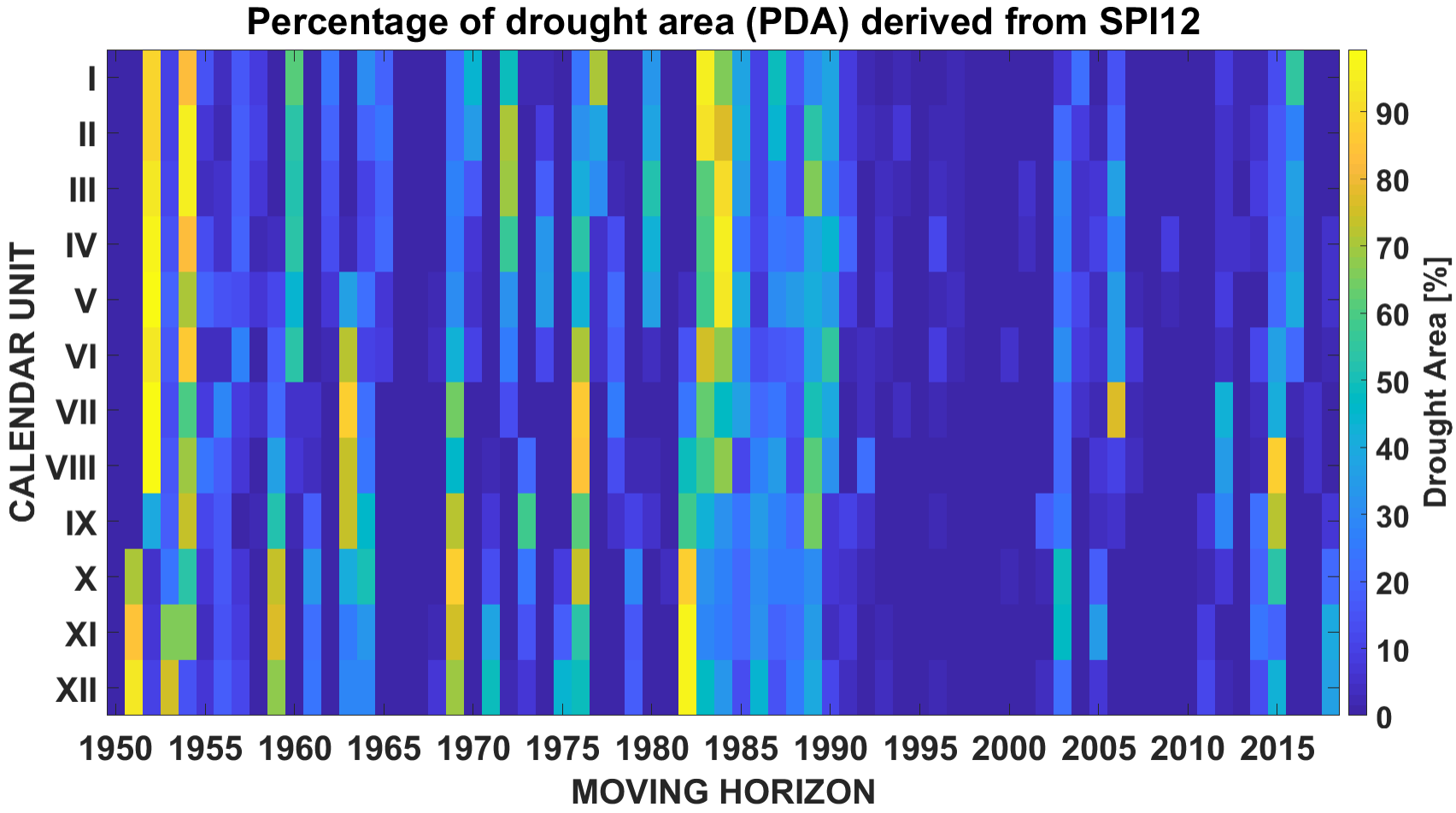
SPI3


Percentage of drought area (PDA) derived from SPI03
CALENDAR UNIT
I
II
III
IV
V
VI
VII
VIII
IX
X
XI
XII
1951
1976
1982
1983
2015
1950 1955 1960 1965 1970 1975 1980 1985 1990 1995 2000 2005 2010 2015
MOVING HORIZON
Drought Area [%]
100
80
60
40
20
0

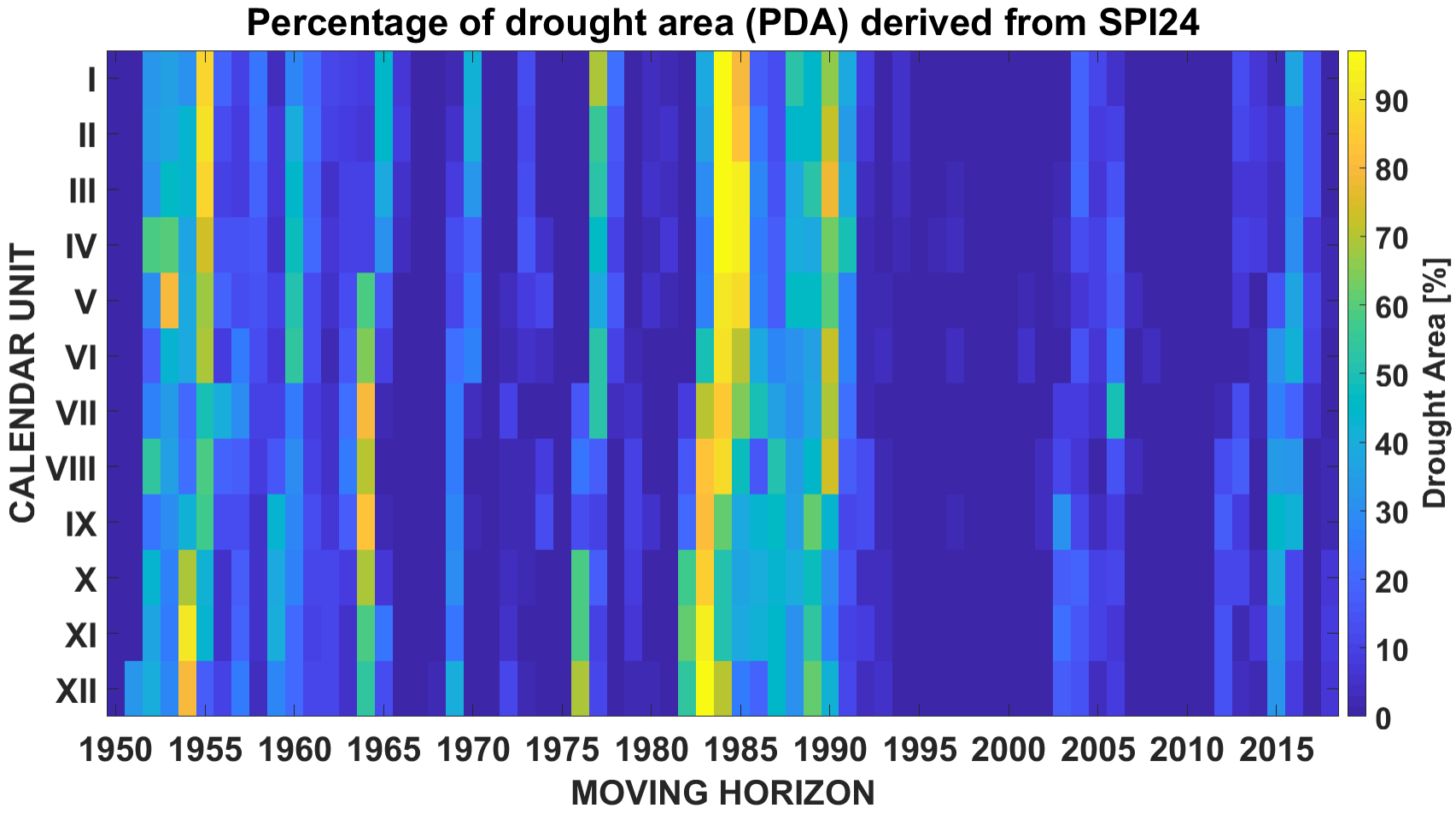
SPI6


Percentage of drought area (PDA) derived from SPI6
CALENDAR UNIT
I
II
III
IV
V
VI
VII
VIII
IX
X
XI
XII
1950 1955 1960 1965 1970 1975 1980 1985 1990 1995 2000 2005 2010 2015
MOVING HORIZON
100
80
60
40
20
0
Drought Area [%]

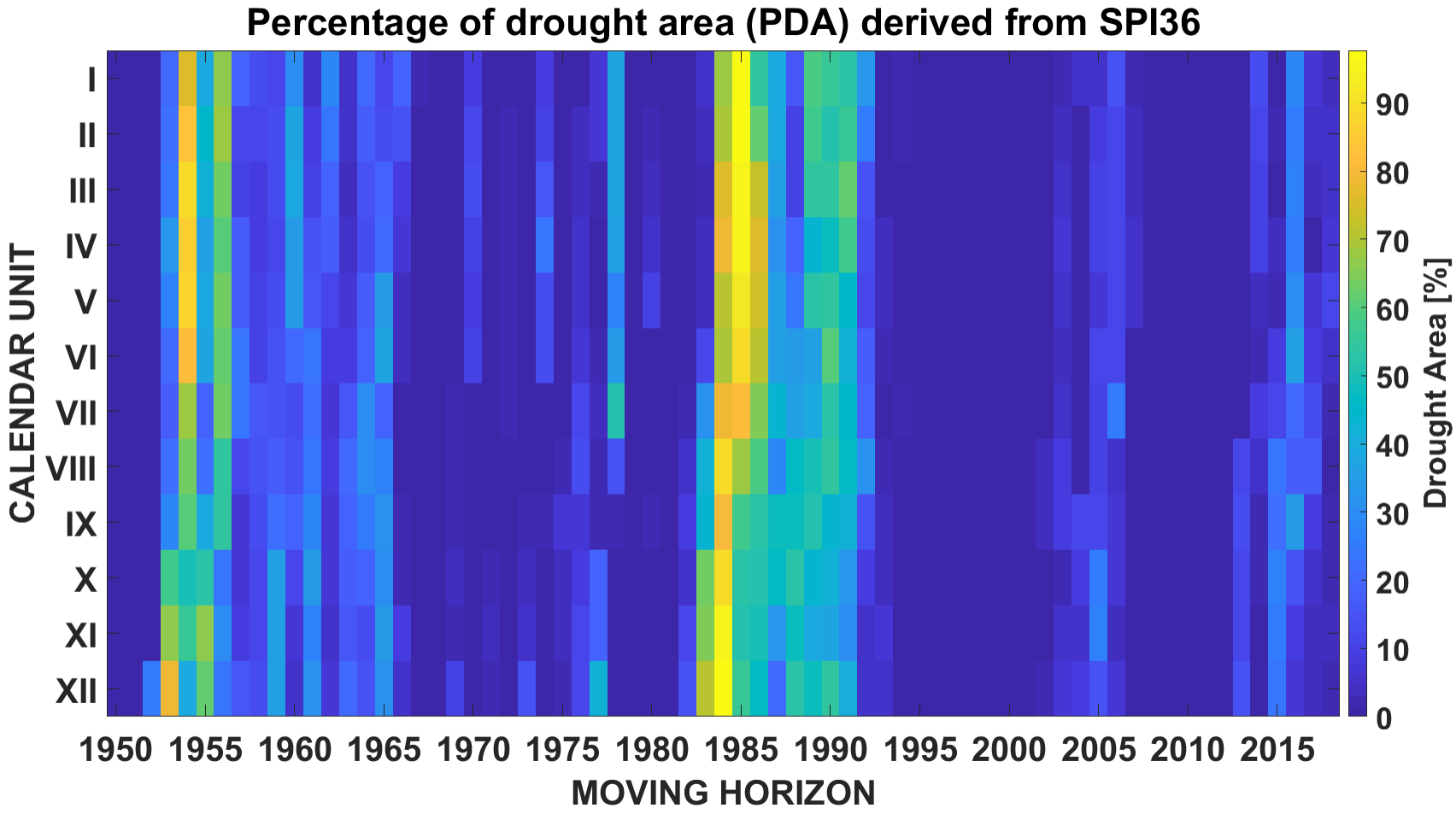
SPI12


Percentage of drought area (PDA) derived from SPI12
CALENDAR UNIT
I
II
III
IV
V
VI
VII
VIII
IX
X
XI
XII
1950 1955 1960 1965 1970 1975 1980 1985 1990 1995 2000 2005 2010 2015
MOVING HORIZON
Drought Area [%]
0 10 20 30 40 50 60 70 80 90

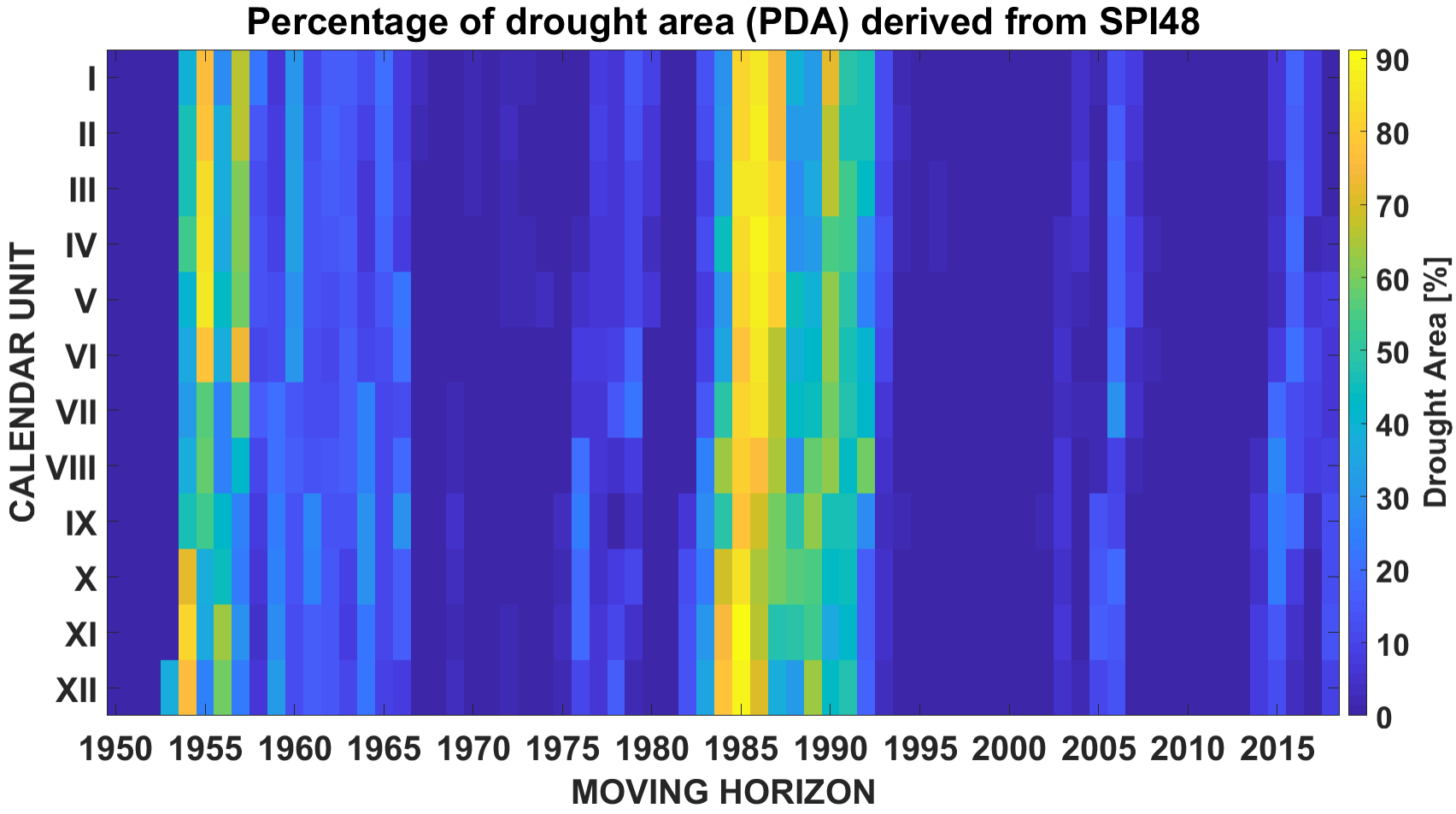
SPI24


Percentage of drought area (PDA) derived from SPI24
CALENDAR UNIT
I
II
III
IV
V
VI
VII
VIII
IX
X
XI
XII
1950 1955 1960 1965 1970 1975 1980 1985 1990 1995 2000 2005 2010 2015
MOVING HORIZON
Drought Area [%]
0
10
20
30
40
50
60
70
80
90

SPI36

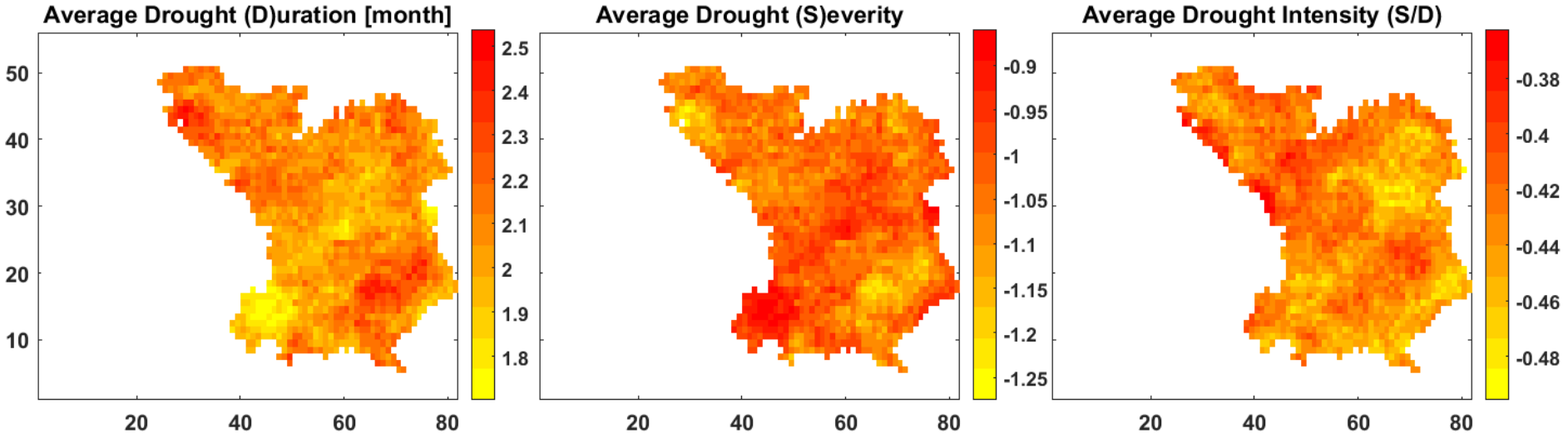

Percentage of drought area (PDA) derived from SPI36
CALENDAR UNIT
I
II
III
IV
V
VI
VII
VIII
IX
X
XI
XII
1950 1955 1960 1965 1970 1975 1980 1985 1990 1995 2000 2005 2010 2015
MOVING HORIZON
Drought Area [%]
0
10
20
30
40
50
60
70
80
90

SPI48

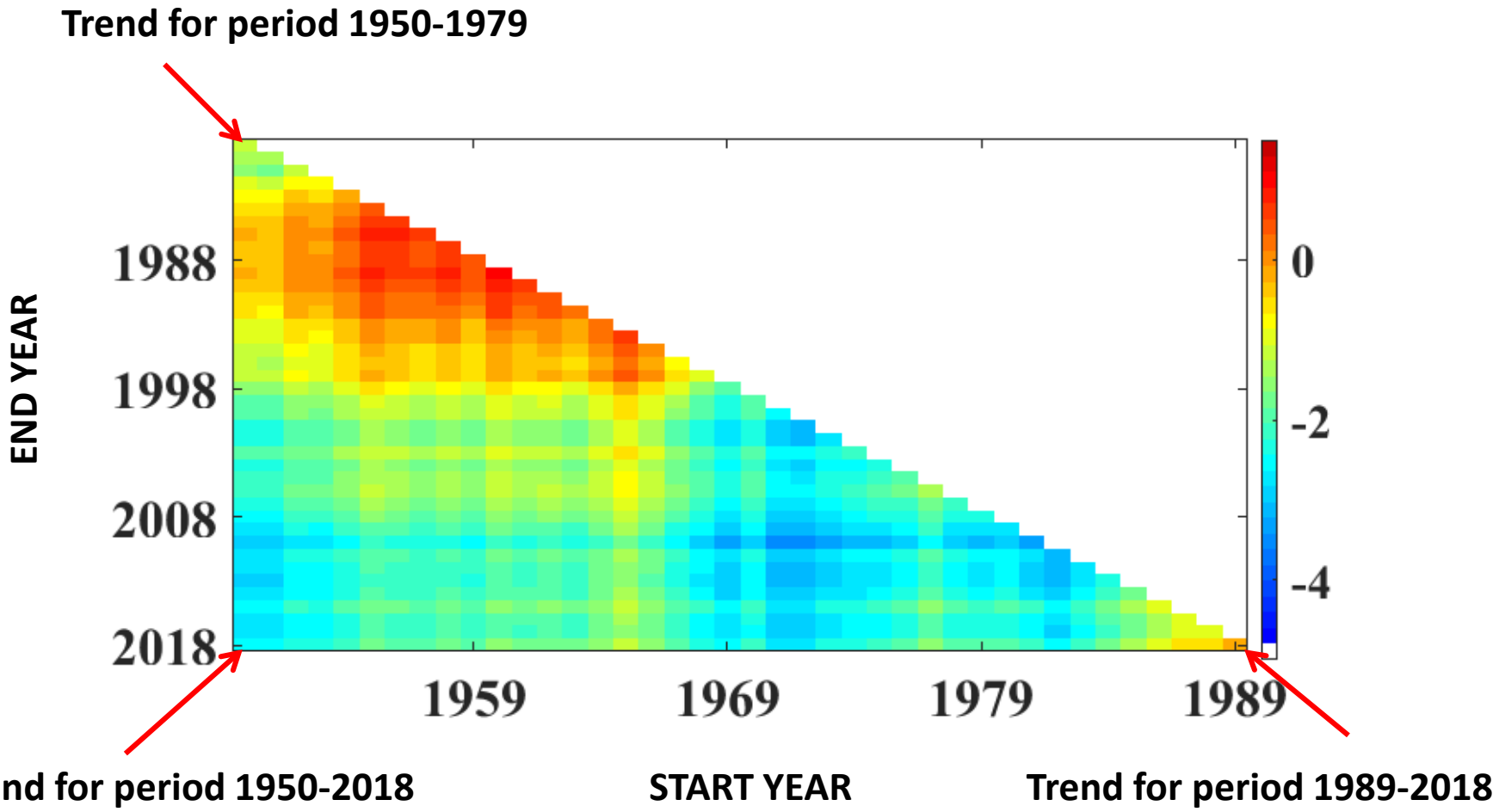

Percentage of drought area (PDA) derived from SPI48
CALENDAR UNIT
I
II
III
IV
V
VI
VII
VIII
IX
X
XI
XII
1950 1955 1960 1965 1970 1975 1980 1985 1990 1995 2000 2005 2010 2015
MOVING HORIZON
Drought Area [%]
90
80
70
60
50
40
30
20
10
0

Case study: Poland (Vistula basin)
Drought indicator (DI): SPI-03

Average Drought Duration/Severity/Intensity



Multi-temporal trend analysis



Thank you!!!