# AIR TEMPERATURE IN THE CITY OF OLOMOUC (1991–2000)

<sup>1</sup> M. Vysoudil, <sup>2</sup> M. Jurek

 <sup>1</sup> Department of Geography, Natural Science Faculty, Palacký University of Olomouc, Svobody 26, 771 46 Olomouc, Czech Republic - vysoudil@prfnw.upol.cz
<sup>2</sup> Department of Geography, Natural Science Faculty, Palacký University of Olomouc, Svobody 26, 771 46 Olomouc, Czech Republic - jurekm@prfnw.upol.cz Head of Department: Ass. Prof. Dr. Miroslav Vysoudil

Received: March 1, 2004, accepted April 1, 2004

### Abstract

The paper deals with elementary characteristics of air temperature in the city of Olomouc (Central Moravia, Czech Republic) in the decade 1991–2000. The data represent a current continuation to existing studies, describing periods 1910–1950 and 1961–1990. The annual course of temperature is described in detail; notice is given both to temperature at climatological times of observation as well as extreme temperatures.

**KEY WORDS:** air temperature, annual course, monthly course, Olomouc, decade 1991–2000

## **1. INTRODUCTION**

A contemporary national climatological atlas of the Czech Republic is still missing. Thus, obsolete climatological characteristics (period 1901–1950) only are available for most sites of the Czech Republic (Climatological Atlas of the Czech Republic, 1957; or Climate of the Czech Republic – Tables, 1960). Such data must unfortunately be considered out of date. Basic climatological characteristics for the city of Olomouc had been elaborated earlier by Vysoudil for the period 1961 to 1990. In 2003, data were processed for the period 1991–2000.

The main goal of this article is to present basic temperature characteristics for the city of Olomouc in the period 1991–2000. The structure of the data is convenient both for a fundamental description of temperature conditions and for a successive, more detailed analysis. Due to the short time span of the data set, trends and variability were not researched. On the other hand, the previously processed decades 1961–1970, 1971–1980, 1981–1990, together with the period 1991–2000, allow us to define a climatic normal and to perform a detailed analysis of temperature conditions in the city of Olomouc for the period 1960–2000 and 1901–2000 respectively.

# 2. METHODS AND DATA

The authors treated meteorological records in the city of Olomouc in the decade 1991–2000. Even during such a short period of time observation at the meteorological station was either interrupted or ended up as described below.

Olomouc-Slavonín (garden/nursery) 225 m a.s.l. Period of observation: Jan 1<sup>st</sup>, 1961–Feb 28<sup>th</sup>, 1993 Geographical location: 49°34′00″ N, 17°14′00″ E

**Olomouc-Slavonín (observatory)** 259 m a.s.l. Period of observation: Mar 1<sup>st</sup>, 1993–Feb 14<sup>th</sup>, 2000 Geographical location: 49°34'10" N, 17°13'01" E

**Olomouc-Holice (grounds of the Faculty of Science, Palacky University)** 210 m a.s.l.

Period of observation: Feb 15<sup>th</sup>, 2000 – up today Geographical location: 49°34'31" N, 17°17'05" E

A homogenous data base was available, containing temperatures at climatological times of observation and temperature extremes. It was used to derive mean daily temperatures, averages of extreme temperatures, temperature amplitudes and other basic climatological characteristics.

All computations, tables and graphs were made using Microsoft Excel tools.

## **3. AIR TEMPERATURE**

Description of temperature conditions is derived from mean daily temperatures. In the Czech Republic (and Czechoslovakia formerly), mean daily temperature of air is computed using three temperature records within a day, performed at climatological times of observation (07:00, 14:00 and 21:00 of local mean time). Basic statistical parameters were consequently derived.

## 3.1. Annual Course

## January

Average monthly temperature in the period 1991 to 2000 was  $-1.5^{\circ}$ C. The highest average temperature occurred in the year 1998 (1.9°C), the lowest in 1997 (-5.2°C). This means that the amplitude of average January temperature was 7.1°C.

# February

Average February temperature in the decade 1991 to 2000 was  $-0.1^{\circ}$ C. The maximum value occurred in 1995 (3.4°C), minimum in 1996 (-4.8°C). The amplitude of average temperature reached 8.2°C.

## March

Average monthly temperature for the period 1991 to 2000 was  $3.6^{\circ}$ C. The highest value occurred in 1994 ( $5.9^{\circ}$ C), the lowest in 1996 ( $-0.5^{\circ}$ C), which resulted in the amplitude of  $6.4^{\circ}$ C.

## April

In April the average monthly temperature in the decade 1991-2000 was  $9.5^{\circ}$ C. The highest monthly average occurred in 2000 (12.8°C), the lowest in 1997 (5.9°C). The amplitude of average temperature was  $6.9^{\circ}$ C.

## May

Average monthly temperature in May was  $14.5^{\circ}$ C during the decade 1991–2000. The highest monthly average was reached in 1993 (16.9°C), the lowest in 1991 (11.2°C). The amplitude of average temperature was  $5.7^{\circ}$ C.

# June

In June the average monthly temperature in the period 1991–2000 was 17.5°C. The highest monthly average occurred in 1992 (19.5°C), the lowest in 1991 (16.2°C). The amplitude of average temperature was 3.3°C.

### July

Average monthly temperature in July was  $19.5^{\circ}$ C during the period 1991-2000. The highest monthly average was reached in 1994 (22.5°C), the lowest in 2000 (16.9°C). The amplitude of average temperature was  $5.6^{\circ}$ C.

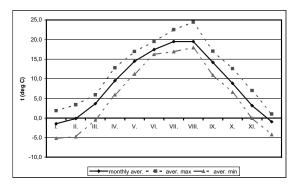


Figure 3.1.1. Annual course of air temperature (°C) Olomouc 1991–2000

#### August

The August average of monthly temperature in the period 1991–2000 was the same as in July, reaching 19.5°C. The highest monthly average occurred in 1992 (24.4°C), the lowest in 1999 (17.9°C), therefore the amplitude of average temperature was larger than in July, reaching  $6.5^{\circ}$ C.

#### September

Average monthly temperature in Septembers of the period 1991–2000 was 14.2°C. The highest monthly average came in 1999 (17.0°C), the lowest in 1996 (11.0°C). The amplitude of average temperature reached  $6.0^{\circ}$ C.

#### October

Average monthly temperature in October during the decade 1991–2000 was  $8.8^{\circ}$ C. The highest monthly average occurred in 2000 (12.6°C), the lowest in 1997 (6.6°C). The amplitude of average temperature reached 6.0°C.

#### November

In November the average temperature in the decade 1991–2000 was  $3.2^{\circ}$ C. The highest monthly average was reached in 2000 (7.0°C), the lowest in 1998 (-0.1°C). The amplitude of average temperature was 7.1°C.

#### December

In December the average monthly temperature in the period 1991–2000 was  $-1.0^{\circ}$ C. The highest monthly average occurred in 1993 and also in 1997 (1.0°C), the lowest one came in 1996 (-4.2°C). The amplitude of average temperature was 5.2°C.

#### Period 1991-2000

Average annual air temperature in the decade 1991 to 2000 was 9.0°C. The highest annual average was reached in 1992 (10.4°C), the lowest occurred in 1996 (7.4°C). The amplitude of average annual temperature was  $3.0^{\circ}$ C.

The lowest mean daily temperature occurred on December  $29^{\text{th}}$ , 1996 (-18.6°C), the highest one was reached on August  $10^{\text{th}}$ , 1992 (30.7°C).

The amplitude of mean daily temperature during the whole decade 1991–2000 was as large as 49.3°C.

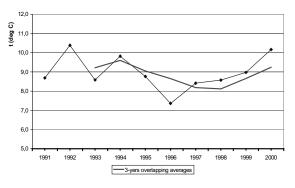


Figure 3.1.2. Annual air temperature (°C) Olomouc 1991–2000

	_						-	_									
Year	I	Π	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Year	III–V	VI–VIII	IX-XI	XII–II
1991	-0.1	-4.0	5.6	8.4	11.2	16.5	20.9	19.1	16.2	8.2	4.0	-1.8	8.7	8.4	18.8	9.5	-2.0
1992	0.0	2.2	4.6	9.8	15.8	19.5	21.8	24.4	15.3	7.9	4.0	-0.6	10.4	10.0	21.9	9.1	0.5
1993	-1.0	-1.4	1.8	10.2	16.9	16.6	17.8	18.5	13.3	9.0	0.3	1.0	8.6	9.7	17.6	7.5	-0.5
1994	1.9	-0.4	5.9	9.4	13.8	17.4	22.5	20.2	15.4	7.0	4.4	0.5	9.8	9.7	20.0	8.9	0.6
1995	-1.3	3.4	2.8	9.0	13.3	16.2	21.3	18.3	12.9	10.4	1.1	-2.2	8.8	8.4	18.6	8.1	0.0
1996	-4.6	-4.8	-0.5	9.0	14.9	17.5	17.0	18.2	11.0	9.7	5.2	-4.2	7.4	7.8	17.6	8.6	-4.5
1997	-5.2	0.8	4.0	5.9	14.3	17.8	17.8	20.0	14.2	6.6	3.6	1.0	8.4	8.1	18.6	8.1	-1.1
1998	0.2	2.1	2.6	10.4	14.0	17.6	18.9	18.5	13.4	8.3	-0.1	-3.1	8.6	9.0	18.3	7.2	-0.3
1999	-1.4	-1.4	5.0	10.2	14.2	16.6	20.0	17.9	17.0	8.8	2.0	-1.2	9.0	9.8	18.2	9.3	-1.3
2000	-3.3	2.3	4.5	12.8	16.2	18.8	16.9	20.0	13.2	12.6	7.0	0.9	10.2	11.2	18.6	10.9	0.0
Aver.	-1.5	-0.1	3.6	9.5	14.5	17.5	19.5	19.5	14.2	8.8	3.2	-1.0	9.0	9.2	18.8	8.7	-0.9
Max.	1.9	3.4	5.9	12.8	16.9	19.5	22.5	24.4	17.0	12.6	7.0	1.0	10.4	11.2	21.9	10.9	2.3
Min.	-5.2	-4.8	-0.5	5.9	11.2	16.2	16.9	17.9	11.0	6.6	-0.1	-4.2	7.4	7.8	17.6	7.2	-1.2
St. dev.	2.2	2.8	2.0	1.7	1.6	1.1	2.1	1.9	1.8	1.7	2.3	1.8	0.9	1.1	1.3	1.1	1.5

Table 3.1.1. Average air temperature (°C) Olomouc 1991–2000

# **3.2.** Air Temperature at Climatological Times of Observation

Data of ambient air temperature measured at climatological times of observation (7 a.m., 2 p.m. and 9 p.m. of local mean time) are used as input values when deriving mean daily temperature. They are also used to obtain a variety of other temperature characteristics.

## Air temperature at 7 a.m.

The annual average air temperature measured at 7 a.m. in the period 1991–2000 was  $6.7^{\circ}$ C. In 2000, the annual average was the highest (7.9°C), while the lowest one occurred in 1996 (5.3°C). The amplitude of annual average temperature at 7 a.m. in the decade 1991–2000 was  $2.6^{\circ}$ C.

The maximum of average monthly temperature observed at 7 a.m. occurred in July 1994 (19.6°C.) and the minimum fell on February 1996 ( $-7.4^{\circ}$ C). The amplitude of the extreme monthly averages was 27.0°C.

The absolute maximum temperature at 7 a.m. was recorded on August  $10^{\text{th}}$ , 1992 (25.5°C), while the minimum was taken on December 29<sup>th</sup>, 1996 (-21.5°C).

### Air temperature at 2 p.m.

The annual average air temperature measured at 2 p.m. in the period 1991–2000 was  $12.3^{\circ}$ C. The highest annual average of air temperature observed at 2 p.m. occurred in 2000 ( $13.8^{\circ}$ C), while the lowest one occurred in 1996 ( $10.5^{\circ}$ C). The amplitude of annual average temperature at 2 p. m. in the decade 1991–2000 was only  $3.3^{\circ}$ C.

The maximum of average monthly temperature observed at 2 p.m. occurred in August 1992 (28.9°C) and the minimum in January 1997 (-3.8°C).

The amplitude of the extreme monthly averages was as large as  $32.7^{\circ}$ C.

The absolute maximum temperature at 2 p.m. was recorded on July  $30^{\text{th}}$ , 1994 (35.3°C) while the minimum was taken on December  $29^{\text{th}}$ , 1996 (-15.8°C).

# Air temperature at 9 p.m.

The annual average of air temperature measured at 9 p.m. in the period 1991–2000 was 8.4°C. The highest annual average of air temperature observed at 9 p.m. occurred in 1992 (10.2°C), while the lowest one occurred in 1996 ( $6.8^{\circ}$ C). The amplitude of annual average temperature at 9 p.m. in the decade 1991–2000 was 3.4°C.

The maximum of average monthly temperature observed at 9 p.m. occurred in August 1992 (24.7°C) and the minimum came in January 1997 (-5.4°C). The amplitude of the extreme monthly averages was 30.1°C.

The absolute maximum temperature at 9 p.m. was recorded on August  $10^{\text{th}}$ , 1992 (31.4°C), while the minimum was taken on December 29<sup>th</sup>, 1996 (-18.6°C).

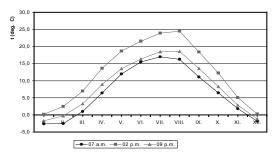


Figure 3.2.1. Course of air temperature (°C) at climatological times of observation Olomouc 1991–2000

						U		1	,	/	,						
Year	Ι	Π	III	IV	V	VI	VII	VIII	IX	Х	XI	XII	Year	III–V	VI–VIII	IX–XI	XII–II
1991	-1.7	-6.9	3.0	5.3	8.9	14.1	18.1	16.2	12.1	5.4	2.6	-2.5	6.2	5.7	16.1	6.7	-3.7
1992	-1.6	0.4	1.5	6.6	12.8	17.9	18.0	19.3	11.3	5.9	2.6	-1.4	7.8	7.0	18.4	6.6	-0.9
1993	-2.8	-3.7	-0.6	6.6	14.0	14.9	15.8	15.4	10.6	7.1	-0.8	0.3	6.4	6.7	15.3	5.6	-2.1
1994	0.8	-2.9	3.6	6.7	11.7	15.2	19.6	17.1	12.5	4.8	3.2	-0.3	7.7	7.3	17.3	6.8	-0.8
1995	-2.4	1.3	0.6	6.6	11.1	14.4	19.1	16.2	10.5	7.3	0.3	-2.8	6.9	6.1	16.6	6.0	-1.3
1996	-5.4	-7.4	-2.7	5.6	12.8	15.6	14.6	15.5	9.2	7.7	3.6	-5.4	5.3	5.2	15.2	6.8	-6.1
1997	-6.1	-1.7	0.7	3.7	12.0	16.0	16.0	16.7	10.7	3.9	2.2	0.5	6.2	5.5	16.2	5.6	-2.4
1998	-0.7	-1.4	-0.3	7.2	11.6	15.7	16.1	14.9	11.2	6.9	-1.1	-4.1	6.3	6.2	15.6	5.7	-2.0
1999	-2.1	-3.1	1.8	6.7	11.3	14.8	17.6	14.4	13.2	6.1	0.5	-2.9	6.5	6.6	15.6	6.6	-2.7
2000	-4.2	0.4	2.5	9.2	13.8	16.3	15.0	16.9	9.9	9.7	5.4	0.3	7.9	8.5	16.1	8.3	-1.2
Aver.	-2.6	-2.5	1.0	6.4	12.0	15.5	17.0	16.3	11.1	6.5	1.8	-1.8	6.7	6.5	16.3	6.5	-2.3

Table 3.2.1. Average air temperature (°C) at 7 a.m., Olomouc 1991–2000

Table 3.2.2. Average air temperature (°C) at 2 p.m., Olomouc 1991–2000

Year	Ι	Π	Ш	IV	V	VI	VII	VIII	IX	Χ	XI	XII	Year	III–V	VI–VIII	IX-XI	XII–II
1991	2.2	-0.7	8.8	11.8	13.8	20.3	25.3	23.4	20.5	12.3	5.7	-0.2	11.9	11.5	23.0	12.8	0.4
1992	1.9	4.8	8.3	12.9	19.5	22.7	25.3	28.9	19.3	10.6	5.5	0.6	13.4	13.6	25.6	11.8	2.4
1993	1.4	1.2	5.0	15.1	21.8	20.5	22.0	23.7	17.6	11.6	1.8	2.1	12.0	13.9	22.0	10.3	1.6
1994	3.3	2.6	9.1	13.4	17.7	21.9	28.0	25.4	19.4	10.4	6.5	1.5	13.3	13.4	25.1	12.1	2.4
1995	0.1	5.5	6.5	12.3	17.5	20.6	26.6	22.8	16.6	14.7	2.5	-1.4	12.0	12.1	23.3	11.2	1.4
1996	-3.3	-2.0	2.3	13.7	18.5	22.2	21.4	22.4	13.8	12.7	7.2	-3.0	10.5	11.5	22.0	11.2	-2.8
1997	-3.8	3.4	7.8	9.9	18.9	22.0	21.4	25.2	19.5	10.8	5.6	2.2	11.9	12.2	22.9	11.9	0.6
1998	1.9	5.3	6.3	14.7	18.7	21.2	23.6	24.0	16.8	10.9	2.0	-1.8	12.0	13.3	22.9	9.9	1.8
1999	-0.2	-0.0	8.9	14.7	19.3	20.6	24.9	23.9	22.3	12.4	4.0	0.7	12.6	14.3	23.1	12.9	0.2
2000	-1.7	4.8	6.9	17.8	21.2	23.7	20.4	25.4	18.4	16.5	9.9	2.4	13.8	15.3	23.1	15.0	1.8
Aver.	0.2	2.5	7.0	13.6	18.7	21.6	23.9	24.5	18.4	12.3	5.1	0.3	12.3	13.1	23.3	11.9	1.0

Table 3.2.3. Average air temperature (°C) at 9 p.m., Olomouc 1991–2000

Year	Ι	Π	Ш	IV	V	VI	VII	VIII	IX	Χ	XI	XII	Year	III–V	VI–VIII	IX–XI	XII-II
1991	-0.4	-4.3	5.4	8.1	11.1	15.7	20.2	18.4	16.0	7.6	3.8	-2.2	8.3	8.2	18.1	9.1	-2.3
1992	-0.2	1.8	4.3	9.8	15.3	18.7	21.9	24.7	15.3	7.5	3.9	-0.7	10.2	9.8	21.7	8.9	0.3
1993	-1.4	-1.6	1.4	9.6	16.0	15.5	16.6	17.4	12.5	8.6	0.1	0.7	8.0	9.0	16.5	7.1	-0.7
1994	1.6	-0.7	5.5	8.6	12.8	16.2	21.1	19.0	14.8	6.4	3.9	0.4	9.1	9.0	18.8	8.4	0.4
1995	-1.3	3.3	2.1	8.5	12.3	14.9	19.6	17.0	12.2	9.7	0.9	-2.2	8.1	7.6	17.2	7.6	-0.1
1996	-4.8	-4.9	-0.8	8.4	14.0	16.2	15.9	17.3	10.4	9.2	5.0	-4.2	6.8	7.2	16.4	8.2	-4.6
1997	-5.4	0.7	3.7	5.1	13.2	16.6	16.9	19.1	13.2	5.8	3.4	0.7	7.8	7.3	17.5	7.5	-1.3
1998	-0.1	2.1	2.3	9.8	12.8	16.7	17.9	17.5	12.8	7.7	-0.5	-3.2	8.0	8.3	17.4	6.6	-0.4
1999	-1.5	-1.4	4.7	9.6	13.0	15.5	18.7	16.7	16.3	8.3	1.8	-1.3	8.4	9.1	17.0	8.8	-1.4
2000	-3.6	2.0	4.3	12.0	14.9	17.6	16.1	18.9	12.2	12.0	6.3	0.4	9.4	10.4	17.5	10.2	-0.4
Aver.	-1.7	-0.3	3.3	8.9	13.5	16.4	18.5	18.6	13.6	8.3	2.9	-1.2	8.4	8.4	17.8	8.0	-1.1

#### 3.3. Air Temperature Extremes

### Maximum air temperature

#### Period 1991-2000

The average of maximum monthly temperature of air in the decade 1991–2000 was  $13.6^{\circ}$ C. The highest average of maximum monthly temperature occurred in the year 2000 (15.0°C), while the lowest average came in 1996 (11.7°C). The amplitude of average maximum monthly temperature in the period 1991 to 2000 was  $3.3^{\circ}$ C.

The highest monthly average of daily maximum temperature in the decade 1991–2000 occurred in August 1992 (30.6°C), while the lowest monthly average belonged to January 1997 ( $-2.8^{\circ}$ C). The corresponding amplitude reached 33.4°C.

The absolute maximum temperature was recorded on August 1<sup>st</sup>, 1994, reaching 36.3°C.

#### Minimum air temperature

#### Period 1991-2000

The average of minimum monthly temperature of air in the decade 1991–2000 was 4.5°C. The highest average of minimum monthly temperature occurred in the year 1994 (5.6°C), while the lowest average came in 1991 (3.3°C). The amplitude of average minimum monthly temperature in the period 1991 to 2000 was 2.3°C.

The highest monthly average of daily minimum temperature in the decade 1991–2000 occurred in July 1994 (15.2°C), while the lowest monthly average belonged to February 1991 ( $-8.9^{\circ}$ C). The corresponding amplitude reached 24.1°C.

The absolute minimum temperature was recorded on December  $29^{\text{th}}$ , 1996 at  $-22.0^{\circ}\text{C}$ .

Table 3.3.1. Monthly average	of daily maximum	temperature of air	(°C) Olomouc 1991–2000
------------------------------	------------------	--------------------	------------------------

Year	Ι	Π	Ш	IV	V	VI	VII	VIII	IX	Χ	XI	XII	Year	III–V	VI–VIII	IX–XI	XII–II
1991	2.8	0.1	9.7	13.3	15.5	21.8	26.4	24.5	21.5	13.2	6.5	0.6	13.0	12.8	24.2	13.7	1.2
1992	2.9	5.6	9.6	14.3	20.7	24.3	27.4	30.6	20.9	11.4	6.6	1.5	14.6	14.8	27.5	13.0	3.3
1993	2.8	2.5	6.0	16.3	23.8	21.8	23.9	25.2	19.3	12.8	2.9	3.3	13.4	15.4	23.6	11.7	2.9
1994	4.5	3.6	10.2	15.0	19.2	23.3	29.5	26.1	20.8	11.5	7.6	2.7	14.5	14.8	26.3	13.3	3.6
1995	1.2	6.7	7.4	14.1	19.1	21.9	28.0	24.4	18.0	15.5	3.5	-0.3	13.3	13.5	24.8	12.3	2.5
1996	-2.3	-1.1	3.3	15.0	20.1	23.4	22.8	23.7	14.9	13.7	8.3	-1.8	11.7	12.8	23.3	12.3	-1.8
1997	-2.8	4.5	9.1	11.6	20.3	23.5	23.0	26.5	20.9	11.8	6.6	3.2	13.2	13.7	24.4	13.1	1.6
1998	2.7	6.6	7.4	16.0	20.4	23.6	24.9	25.5	18.2	11.9	2.7	-0.8	13.3	14.6	24.7	10.9	2.8
1999	0.6	1.2	9.9	16.2	20.7	22.7	26.6	25.4	23.7	13.7	4.7	1.8	13.9	15.6	24.9	14.0	1.2
2000	-0.7	5.7	8.6	18.9	22.6	25.3	22.4	26.7	19.4	17.2	10.8	2.9	15.0	16.7	24.8	15.8	2.7
Aver.	1.2	3.5	8.1	15.1	20.2	23.2	25.5	25.9	19.8	13.3	6.0	1.3	13.6	14.5	24.8	13.0	2.0

Table 3.3.2. Monthly average of daily minimum temperature of air (°C) Olomouc 1991–2000

Year	Ι	П	Ш	IV	V	VI	VII	VIII	IX	Х	XI	XII	Year	III–V	VI–VIII	IX–XI	XII–II
1991	-3.6	-8.9	1.3	2.1	5.5	9.4	14.1	12.3	8.7	3.3	0.6	-5.1	3.3	3.0	12.0	4.2	-5.9
1992	-3.4	-1.5	-0.5	3.4	8.0	11.9	12.7	15.0	9.1	4.0	1.5	-2.7	4.8	3.6	13.2	4.9	-2.5
1993	-4.5	-4.9	-2.2	3.1	9.1	10.4	11.2	12.0	8.9	6.0	-2.1	-1.4	3.8	3.4	11.2	4.2	-3.6
1994	-0.6	-3.7	2.2	4.2	8.5	11.7	15.2	14.8	11.3	3.5	2.1	-1.4	5.6	5.0	13.9	5.6	-1.9
1995	-3.2	0.5	-0.6	4.6	8.1	11.8	14.8	13.5	9.4	6.5	-0.9	-3.8	5.0	4.0	13.4	5.0	-2.2
1996	-6.5	-8.6	-3.4	3.8	10.3	12.2	12.1	13.2	8.2	6.8	2.6	-6.7	3.6	3.6	12.5	5.8	-7.3
1997	-8.0	-2.9	-0.2	0.9	9.0	12.2	13.4	13.6	8.9	2.9	1.1	-0.6	4.2	3.2	13.1	4.3	-3.8
1998	-2.5	-2.8	-1.9	5.2	8.0	12.4	13.4	12.5	9.9	5.7	-2.4	-5.5	4.3	3.8	12.8	4.4	-3.6
1999	-3.1	-4.0	1.0	4.6	8.1	11.4	14.1	12.1	11.6	5.1	-0.3	-4.3	4.7	4.6	12.5	5.5	-3.8
2000	-6.7	-0.8	0.6	5.6	8.9	10.9	12.2	13.5	7.9	8.5	3.4	-1.3	5.2	5.0	12.2	6.6	-3.0
Aver.	-4.2	-3.8	-0.4	3.8	8.3	11.4	13.3	13.3	9.4	5.2	0.6	-3.3	4.5	3.9	12.7	5.0	-3.8

## 4. CONCLUSIONS

The analysis of time series data of temperature measurements in the city of Olomouc in the period 1991–2000 as presented in this paper broadens information about climatological features of the city. An assumption was made for a consequent study of a one-hundred-year long time series of air temperature measurements. A detailed comparison of all decades within the period 1961–2000 is now possible. Such a study would establish the grounds for describing short-term fluctuations of climate in the city of Olomouc and/or verify occurrence of certain climatic singularities.

## 5. SOUHRN

# TEPLOTA VZDUCHU V OLOMOUCI V OBDOBÍ 1991–2000

Předložená analýza teplotní řady meteorologických pozorování v Olomouci v období let 1991–2000 rozšiřuje poznatky o charakteru klimatu v Olomouci o další dekádu. Tím byl vytvořen předpoklad pro další případné analýzy již stoleté pozorovací řady. Nabízí se vzájemné srovnání všech dekád v období 1961–2000. Byl by vytvořen předpoklad pro popis možného krátkodobého kolísání podnebí v Olomouci či ověření projevů některých singularit.

## **6. REFERENCES**

COUFAL, L. A KOL. (1992): Meteorologická data na území ČR za období 1961–1990. Národní klimatický program ČSFR. ČHMÚ, Praha. Meteorologická pozorování v Olomouci 1991–2000. Databáze archívu ČHMÚ Ostrava-Poruba. NOSEK, M. (1972): Metody v klimatologii. Academia. Praha.

© doc. RNDr. Miroslav Vysoudil,CSc. Department of Geography Natural Science Faculty Palacky University Olomouc Svobody 26 771 46 Olomouc Czech Republic vysoudil@prfnw.upol.cz © Mgr. Martin Jurek Department of Geography Natural Science Faculty Palacky University Olomouc Svobody 26 771 46 Olomouc Czech Republic jurekm@prfnw.upol.cz

Reviewed: doc. RNDr. Milan Trizna, Ph.D.