

# Meteo-climatic analysis

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## Introduction

The mountain sector of Soca basin has characteristics for specific weather types and climatic pattern. In overall, it turns out to be the one with higher amount of total precipitation in the eastern Alps - average annual precipitation over 2000 mm with peaks up to 3200 mm It is therefore necessary to analyze with great detail the climatology of the area and in particular the spatial and temporal distribution of precipitations in order to understand how they may relate to the hydrological and hydrogeological located at the end of the basin.

## Methods

The meteoric statistical analysis of climatological data is performed based on the following data sources:

22 time series composed by daily data without data gaps very extensive in time - of which nineteen currently located in Slovenia and three in Italian territory (sub-basins Ucka and Torre) for the period 1981-2010. The rainfall stations are located in Italian territory includes data on phenomena brief and intense - with hourly time step

Seven meteoric series are characterized by a semi-secular time span, thus particularly suitable for the understanding of the "climatic change" in the Alps

Three nivometric stations, temporally extended for the period 1981-2010

Four thermometric stations from 1980 and useful for assessing recent thermometric signal.

Multivariate analysis of the spatial distribution of mean annual rainfall in relation to the physiography of the area

Reanalysis of meteorological situations precursors of extreme phenomena and characterization of the types of bad weather.

## Results of research

The analysis of pluviometric data show that:

- Rainfall extremely high - between 1400 and 3100 mm / year, with record rainfall average in the Italian territory in the station Ucea (namesake Ucea) - 3096 mm / year for the period 1961-2000 and Musi, 3046 mm for the period 1981-2010

- Homogeneous pluviometric regime throughout the basin - subalpine type (Fazzini, 2006), characterized by an absolute maximum between September and November, and a second maximum in June and two minima, with the main one in the winter (February). Only in Mrzla Rupa, the absolute minimum seasonal falls in the summer (main minimum in July)

- The trends rainfall show a signal contrasted, with equal number of increments and decrements, without there being a geographical evidence. More uniform is the signal relative to short and intense rainfall, that did not show significant variations in the intensity of precipitation. Average annual temperatures tend to

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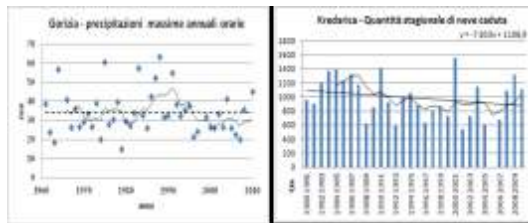
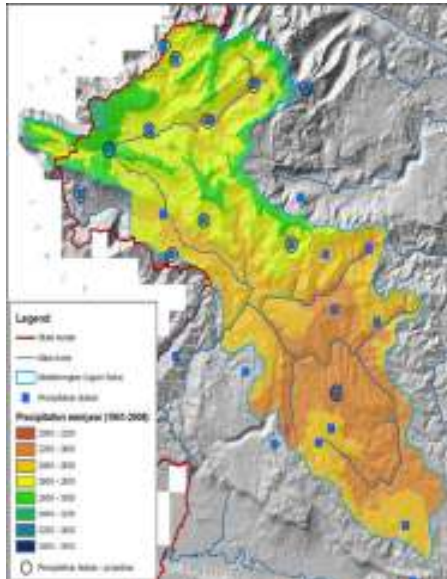


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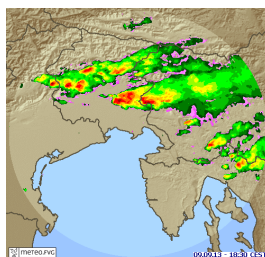
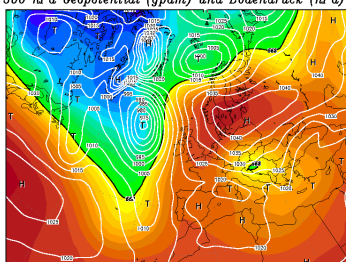
increase of 0.5-0.7°C. The study of seasonal snowfall shows a tendency to a general decline, more sensitive at medium-low altitude.

•Does not exist statistical relationship between altitude and precipitation; multivariate statistical analysis showed that the increase in precipitation is rather linked to orographic; the most abundant precipitations are observed in close to the watershed oriented from west to east, in the valleys open to the currents of south-west (SW)



STATION	ELEV	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Max	min	Win	Spr	Sum	Aut	Sum	AT
BILJE	57	83	67	81	96	119	119	98	114	165	158	153	129	274	20	280	296	331	476	1379	4
BUKOVO	676	113	94	126	148	152	173	156	157	204	226	222	186	372	34	392	426	487	651	1949	-7
KOBARID	248	152	111	165	200	216	210	174	184	270	297	310	246	526	31	509	581	568	878	2536	0
HRUSICA PRI COLU	876	126	108	138	149	148	159	113	140	180	207	224	200	355	32	434	435	412	611	1885	3
KAN POD KANALCOM	700	148	112	145	185	192	186	149	182	231	255	263	228	441	35	489	523	517	749	2278	-10
KNEVSKJE RAVNE	867	182	119	184	219	219	227	175	196	270	323	315	278	536	41	578	622	599	907	2714	-8
KREDARICA	2514	96	89	128	161	187	209	220	218	229	238	190	132	362	40	316	476	647	657	2080	0
CLODIG	253	137	101	138	180	180	210	153	158	208	214	238	164	667	0	402	499	521	660	2080	-4
MUSI	663	150	122	190	273	307	256	192	236	308	388	358	261	1072	0	533	770	684	1054	3043	25
LIVEK	650	162	104	167	214	213	219	172	175	241	271	287	239	476	35	505	594	566	799	2462	2
LOG POD MANGRTOM	671	128	98	147	192	194	186	181	175	237	295	271	214	475	29	440	533	542	804	2317	5
LOKVE	950	155	135	155	191	192	191	145	168	227	231	286	238	437	38	528	538	504	743	2313	6
MORSKO PRO CANALU	108	126	96	126	148	169	185	133	166	224	218	223	196	396	29	418	443	484	665	2011	-3
MRZLA RUPA	846	188	154	192	213	190	193	177	231	264	342	289	501	45	631	595	522	837	2586	10	
MONTEMAGGIORE	954	177	127	173	230	256	285	209	184	263	306	283	225	526	36	530	659	678	851	2717	-9
NA STANU	976	102	82	115	130	141	154	140	147	186	198	202	185	337	31	369	386	442	586	1790	-1
PODBRDO	504	121	101	156	179	172	189	148	169	201	252	246	205	406	35	427	506	506	699	2126	-4
RAZDRTO	565	100	88	107	114	126	143	91	122	153	169	166	149	279	27	337	347	356	487	1528	7
RUT	711	138	111	161	185	190	208	160	181	228	281	262	237	442	39	486	536	549	771	2342	1
SEMPAS	110	85	73	86	109	121	140	102	116	163	154	167	141	281	21	299	315	359	483	1446	0
SLAP	154	89	76	89	108	114	130	90	123	153	168	160	138	273	25	304	310	344	481	1425	-3
TRENTA	627	105	84	119	160	174	184	172	181	213	249	241	182	413	28	371	452	537	703	2057	0
VEDRIJAN	254	93	76	92	130	134	151	111	134	187	167	168	129	323	22	298	357	396	522	1573	-12
ZAGA	372	173	126	196	236	265	221	195	203	281	371	373	299	642	32	598	698	619	1025	2941	-1
AVERAGE		130	102	141	173	182	189	151	167	219	246	248	204	450	29	436	496	507	713	2149	0

07NOV2003\_002  
500 hPa Geopotential (gpm) und Bodendruck (hPa)



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