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On Recent Geodynamics of the Sudeten and Adjacent Areas

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Decade of Seismological Observation in the Northern Part of Moravo-Silesian Region

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Main topics

- Seismological stations
- Summary of recorded events
- Most recent natural earthquakes
- Perspectives

Solitary seismic stations operated by IGN

STATION	LOCATION	OPERATION
HRMC	HRADEC ABOVE MORAVICE	23.10.1997-7.11.1999
ZLHC1	ZLATÉ HORY - MINE	4.11.1997-7.7.1998
ZARC	ŽÁRY NEAR MĚSTO ALBRECHTICE	5.8.1998-30.5.2000
PORC	PORUBA	6.5.1999-22.11.1999
RADC	RADUŇ NEAR OPAVA	30.6.2000-14.12.2000 FROM 8.3.2001
SMEC	STARÉ MĚSTO	16.5.2001-8.8.2001
JNVC	JANOV NEAR JINDŘICHOV	22.6.2001-8.5.2002
JVRC1	ČERVENÝ DŮL NEAR JAVORNÍK	23.7.2001-17.10.2001
JVRC	JÁNSKÝ VRCH IN JAVORNÍK	17.10.2001-3.10.2002
SHAC	SLEZSKÁ HARTA	25.6.2002-26.10.2006
ZLHC	ZLATÉ HORY - GALLERY	FROM 1.9.2003
KLOK	**KLOKOČOV**	**FROM 11.1.2007**
OKC	***OSTRAVA – KRÁSNÉ POLE***	***PERMANENT STATION OF NATIONAL NETWORK***

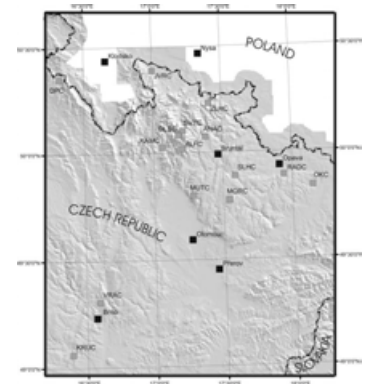
(5 points with continuous recording RADI, FULN, STEB, KLOK, PALK– 2003-2005, GACR 205/03/0999)

Seismic stations operated by Institute of Physics of the Earth, Masaryk University Brno

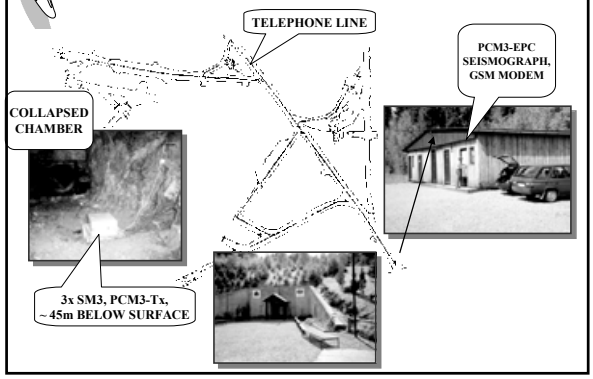
Moravský Krumlov (**KRUC**)
Vranov near Brno (**VRAC**)
Moravský Beroun (**MORC**)

Mutkov (**MUTC**)

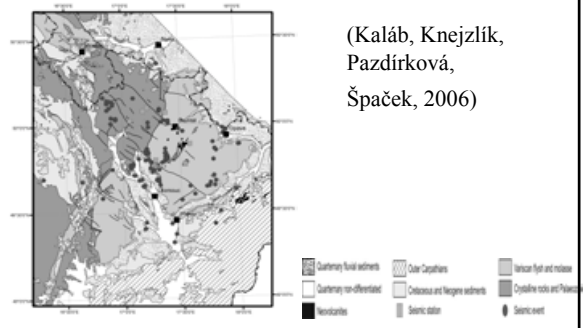
Network of Dlouhé stráně **KAMC**, **DLSC**, **SVYC**, **ANAC**, **ALFC**)



DISPOSITION OF SEISMIC STATION ZLATÉ HORY

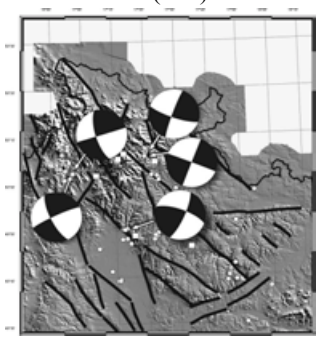


Earthquake foci recorded in 2000-2004 in Moravia and Silesia displayed in geological map



(Kaláb, Knejzlík, Pazdírková, Špaček, 2006)

Results of fault plane solution for five most intensive events (IPE)

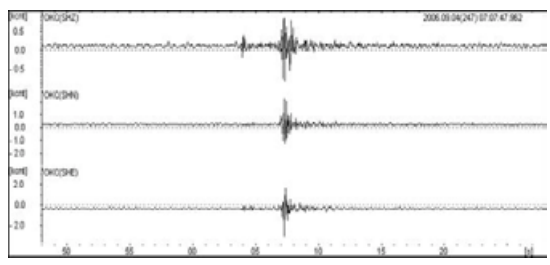


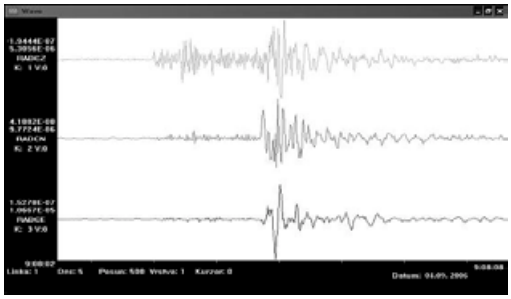
Most recent earthquakes detected by IGN

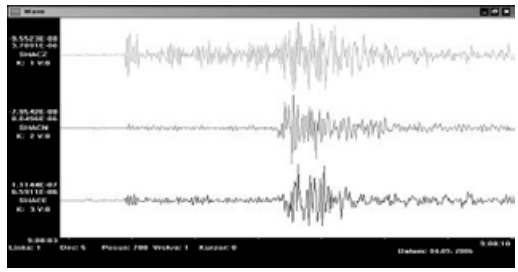
Date	Time (UTC)	φ	λ	Location	Station
21.03.2006	16:26	49.69	16.31	Polička	OKC,ZLHC
04.09.2006	07:07	49.83	17.79	near Hradec above Moravice	OKC,SHAC,RADC
14.09.2006	02:03	49.69	17.50	near Štenberk	OKC
14.10.2006	19:53	49.42	17.22	Prostějov	OKC
21.10.2006	07:26			near Dolní Benešov	OKC,RADC
19.11.2006	08:09			Tovačov	OKC
31.01.2007	00:25	50.01	16.89	Šumperk	OKC,KLOK

Most recent earthquakes detected by IGN in 2006-2007

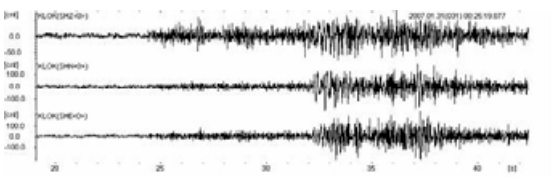
Tectonic earthquake located near Hradec n. Moravicí, 04.09. 2006 07:07:59.355 UTC
Location: 49.832° N , 17.799° E;
Depth 15km, local magnitude ML 1.2 (IPE)







Tectonic earthquake originated near Šumperk recorded at Klokočov 31.1.2007 (Digital continuous recorder GAIA 2, 3 component sensor ViGeo 2)



Main information

- Permanent monitoring of seismicity in northern part of Moravo-Silesian region (south part is monitored by IPE)
- Identification of recorded data using all available information, detailed interpretation of local seismic events
- Comparison of seismological results with geomorphological, geological and geophysical patterns of region
- Modernization of recorded instruments and their parameters, preparing of seismic stations in better seismological conditions (e.g. SHAC»KLOK)

Remarks to existence of seismic activity

- Weak seismic activity (variable in space and time)
- About 100 shocks were detected during period 1997-2006 by solitaires seismic stations operated by IGN

At the conclusion

- Keep seismic monitoring in investigated area *(Research Programme of Academy of Sciences of the Czech Republic)*
- Contribute to determination of seismic active areas
  (confrontation of recorded data with new results from geodetic and geological researches)
- Supply recorded data and interpreted values for integrated research
  (local bulletin - //www.ugn.cas.cz//)

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Thank you for your attention

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