Příklad 19: Výpočet magnituda teleseismických jevů z amplitud povrchových vln

- použijeme excelovskou tabulku magnituda.xls

Vypočtěte magnitudo z amplitudy a periody povrchových vln, použijte údaje z bulletinu USGS:

```
17 NOV 2009  (321)

     ot  = 15:30:46.50   +/-   1.04             QUEEN CHARLOTTE ISLANDS REGION
     lat =      52.151   +/-    2.9
     lon =    -131.378   +/-    2.8             MAGNITUDE 6.6 (GS)
     dep =        11.6   +/-    6.9
```

sta	phase	arrival	res	dist	azm	amp	per	mag	amp	per	mag	sta
AGMN	eP	15:35:48.37	-1.6	22.9	85	b:1.3+3	.53	6.7				AGMN
	LR	15:41:39.42				S:1.1+2	20.					
OGNE	eP	15:35:50.32	0.0	22.9	108	b:5.8+3	1.8	6.8				OGNE
	LR	15:41:40.06				S:2.5+2	19.					
W18A	eP	15:35:50.75	-0.5	23.0	129							W18A
SDCO	eP	15:35:52.45	-0.3	23.1	118	b:1.2+3	.98	6.4				SDCO
	LR	15:41:46.09				S:2.8+2	19.					
GAMB	eP	15:36:00.27	0.6	23.9	315	b:7.3+2	1.0	6.2				GAMB
ECSD	eP	15:36:05.34	-0.7	24.6	96	b:1.4+2	1.1	5.5				ECSD
	LR	15:42:26.88				S:1.4+2	21.					
ANMO	eP	15:36:07.48	-0.5	24.7	124	b:4.5+2	.98	6.1				ANMO
	LR	15:42:31.98				S:1.2+2	22.					
TUC	eP	15:36:08.66	-0.2	24.9	135	b:4.4+2	1.2	6.0				TUC
	LR	15:42:35.16				S:1.1+2	21.					
LAZ	eP	15:36:08.85	0.1	24.8	126	b:4.0+2	1.2	5.9				LAZ
BGNE	eP	15:36:09.18	-0.4	24.9	102							BGNE
LENM	eP	15:36:10.13	-1.1	25.1	126	b:4.1+2	1.2	6.0				LENM
LPM	eP	15:36:11.47	-0.3	25.2	125	b:6.5+2	1.4	6.1				LPM
BNM	eP	15:36:12.42	-0.6	25.3	126	b:2.5+2	1.1	5.8				BNM
EYMN	eP	15:36:16.53	0.0	25.7	83	b:1.9+3	1.1	6.7				EYMN
	LR	15:42:59.81				S:2.7+2	20.					
SPMN	eP	15:36:20.23	-0.1	26.1	90							SPMN
KSU1	eP	15:36:30.54	-0.4	27.3	105	b:3.0+2	.90	6.0				KSU1
	LR	15:43:45.04				S:1.5+2	20.					
ADK	eP	15:36:31.43	-1.4	27.5	288	b:3.9+3	1.4	7.0				ADK
	LR	15:43:51.74				S:2.4+1	21.					
MSTX	eP	15:36:31.65	-0.5	27.4	120							MSTX
MNTX	eP	15:36:35.55	-0.6	27.9	127	b:8.7+0	.98	4.5X				MNTX
	LR	15:44:01.45				S:7.4+1	22.					
COWI	eP	15:36:36.30	-0.6	28.0	86	b:1.2+2	.68	5.8				COWI
	LR	15:44:04.35				S:2.4+2	19.					
SCIA	qP	15:36:36.33	2.3	27.7	96	b:5.8+2	1.3	6.2				SCIA
	LR	15:43:55.07				S:1.9+2	19.					
GDL2	qP	15:36:36.74	-0.4	28.0	125	b:1.5+2	1.1	5.7				GDL2
CLNB	qP	15:36:39.45	0.6	28.2	124	b:1.7+2	.96	5.8				CLNB
JFWS	eP	15:36:45.07	-0.2	28.9	92	b:1.0+3	1.7	6.3				JFWS
	LR	15:44:30.99				S:5.7+1	20.					
WMOK	eP	15:36:46.42	0.0	29.0	114	b:4.7+2	1.0	6.2				WMOK
	LR	15:44:34.50				S:1.4+2	20.					
TUL1	eP	15:36:53.26	-0.9	29.9	109							TUL1
ABTX	eP	15:36:54.40	-1.8	30.1	118							ABTX
SLM	eP	15:37:06.72	-0.9	31.4	99	b:1.5+2	1.0	5.9				SLM
JCT	eP	15:37:08.99	-1.1	31.7	121	b:3.0+2	1.0	6.1				JCT
	LR	15:45:50.71				S:2.0+2	19.					
WHTX	eP	15:37:10.20	-0.7	31.8	116							WHTX
MIAR	eP	15:37:11.66	-2.4	32.2	108	b:9.1+3	2.4	7.3X				MIAR
	LR	15:46:03.80				S:1.4+2	21.					

- obecný postup:

a) Odečtěte z bulletinu USGS potřebné údaje o amplitudě, periodě a epicentrální vzdálenosti.

b) Vypočtěte magnitudo Ms