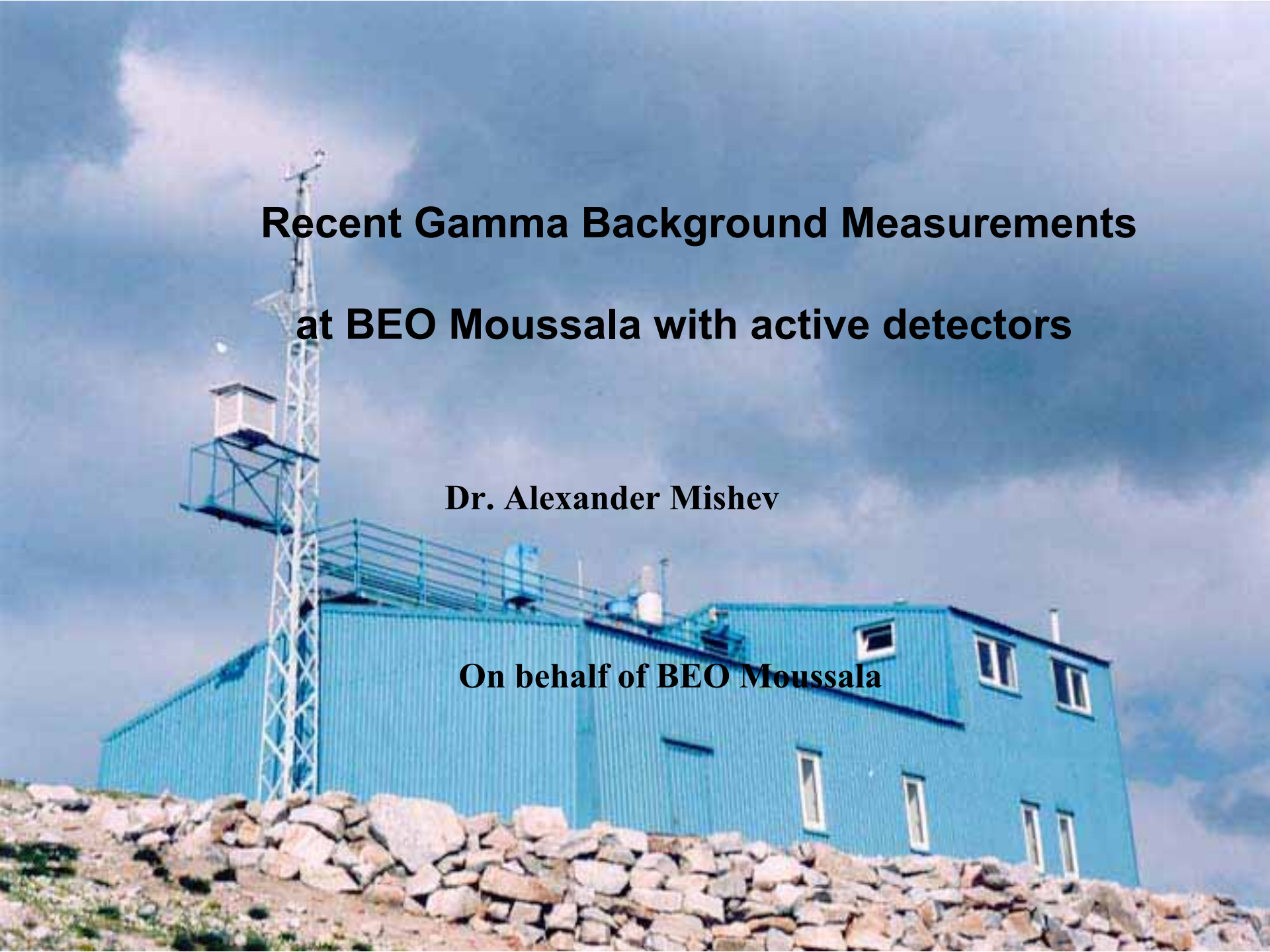


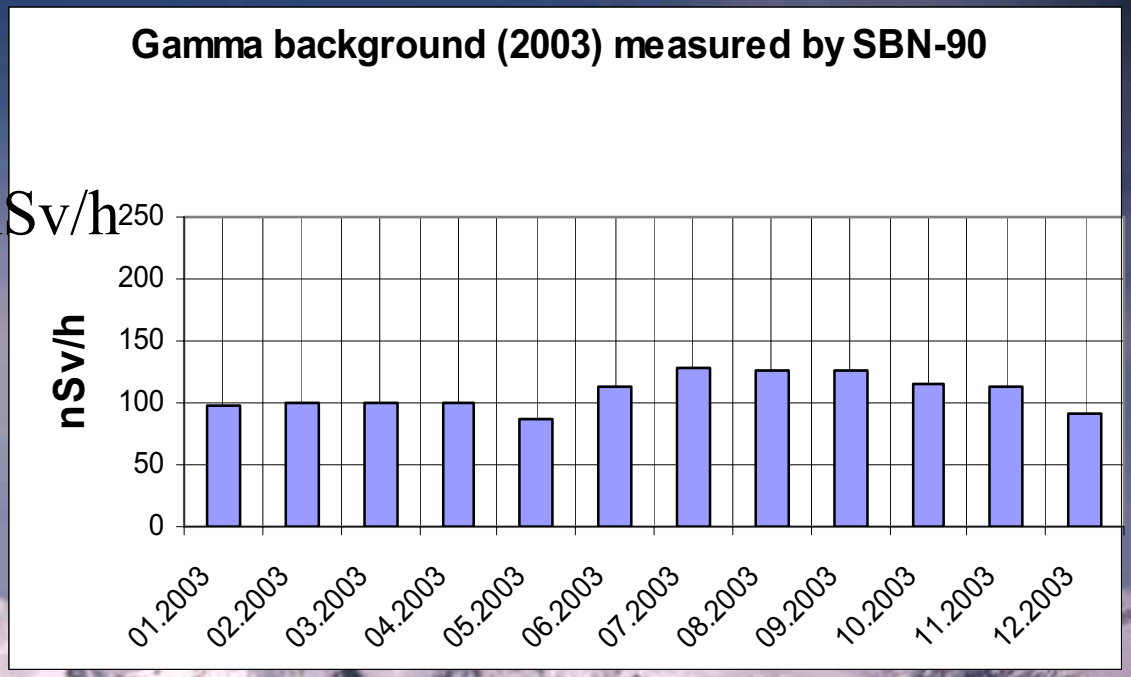
Recent Gamma Background Measurements at BEO Moussala with active detectors

Dr. Alexander Mishev

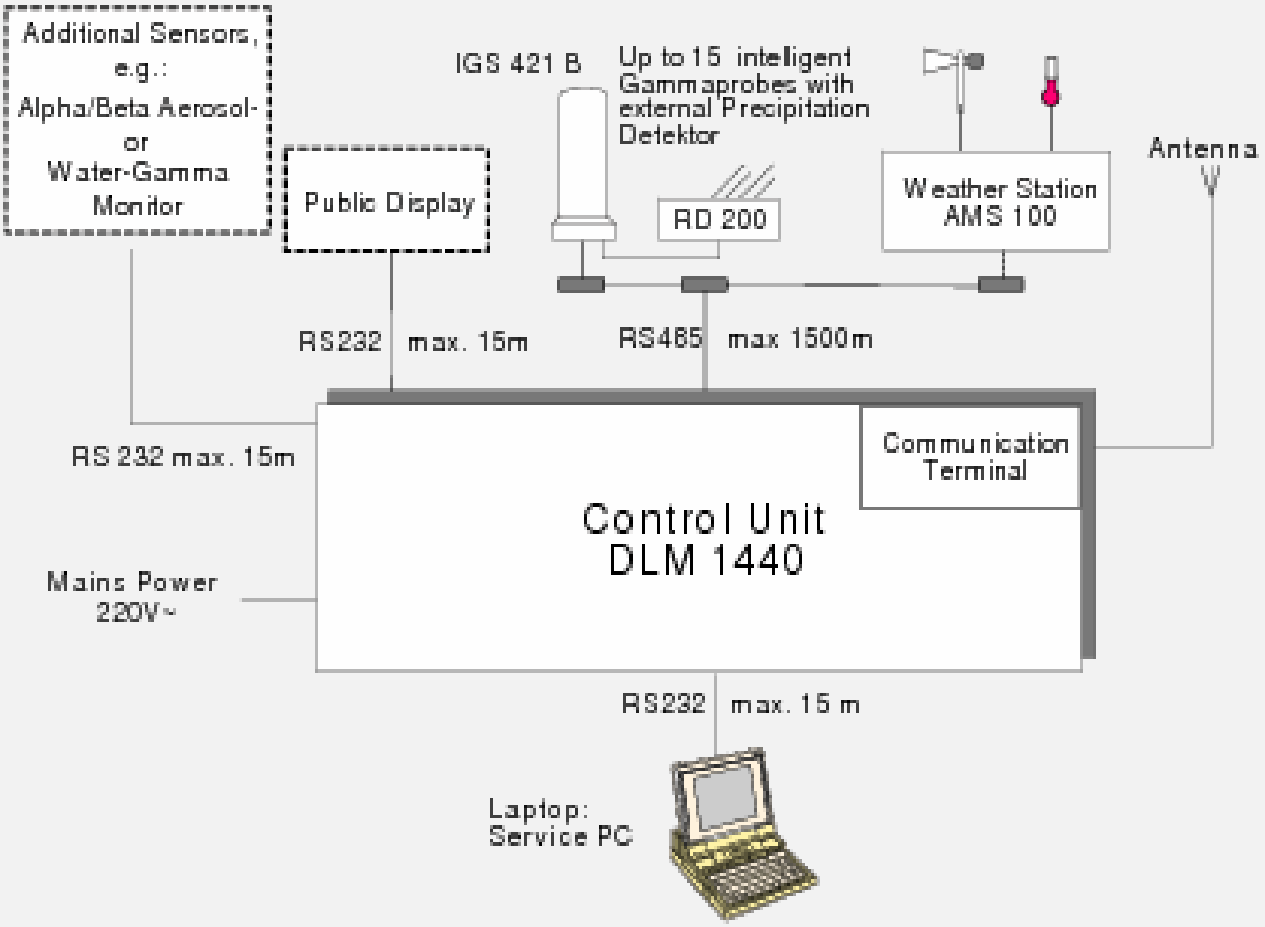
On behalf of BEO Moussala

Gamma background measurements with SAPHYMO

Mean dose-rate ~ 120-130 nSv/h




Technidata gamma probe
based on GM tubes



Sensitivity range
10 nGy/h …10 Gy/h

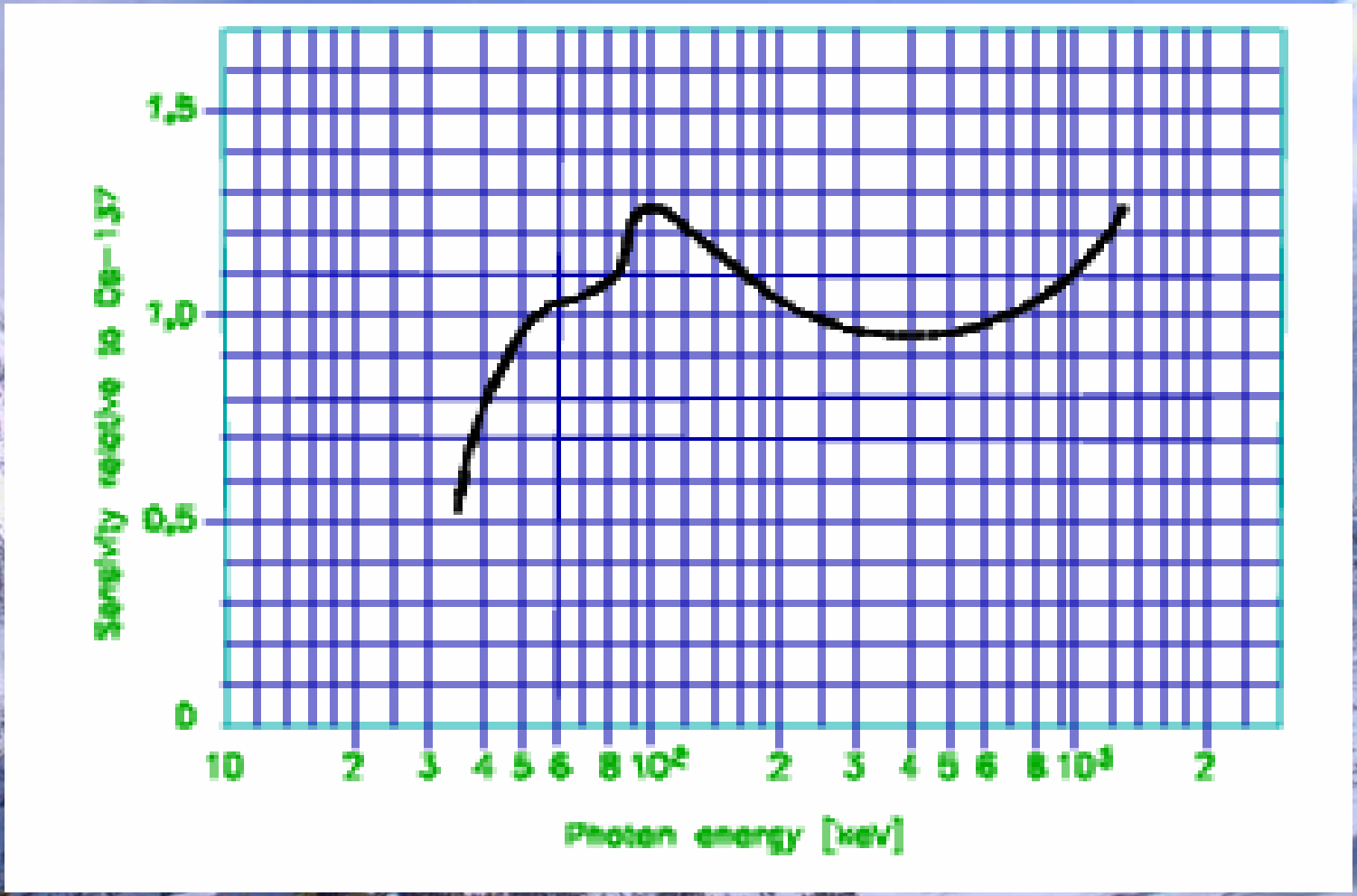
Accuracy
~ 15% resp. to Cs-137

Operating tem.
-40 deg. C …+ 60 deg. C

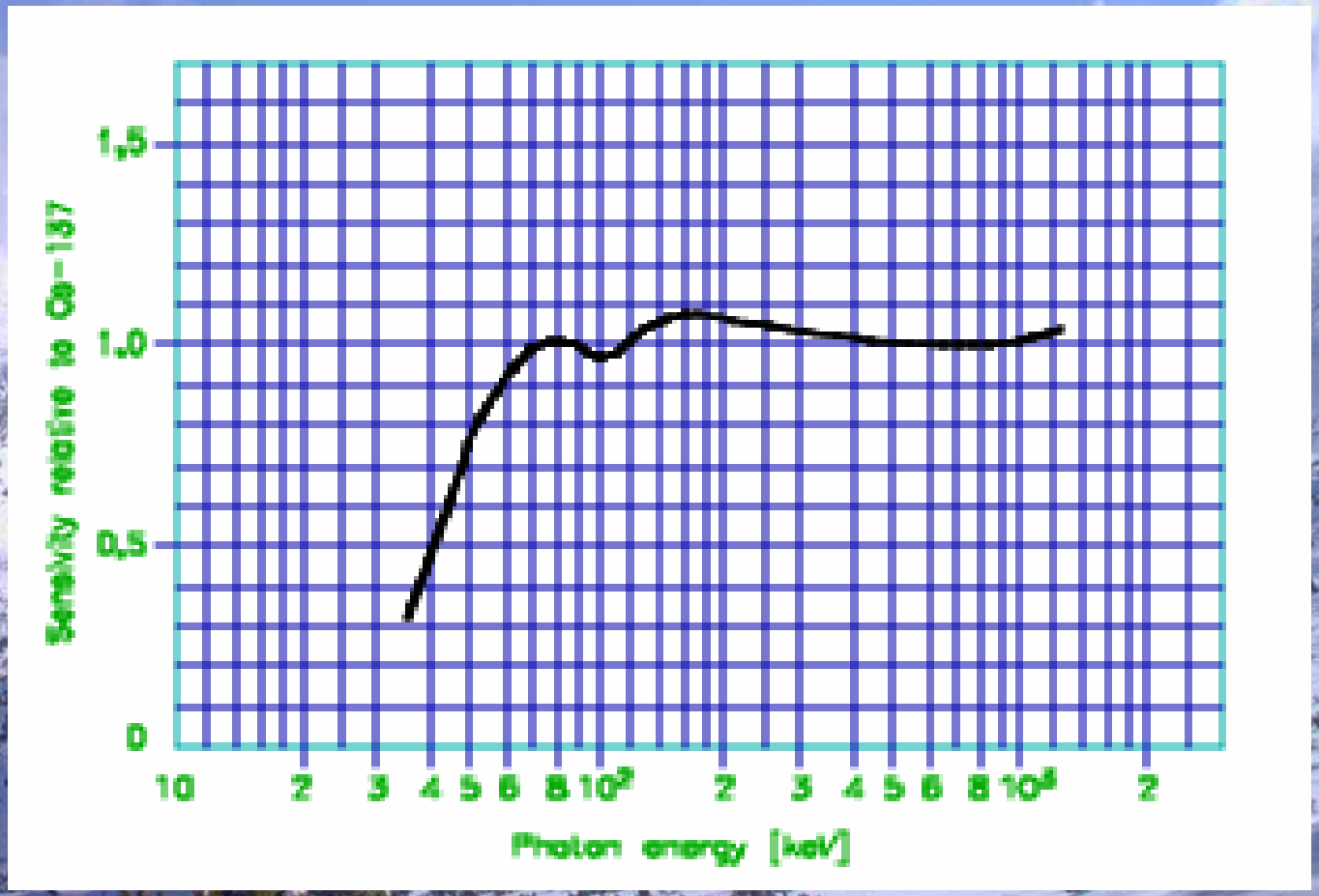
Dimensions
80/115mm x 635 mm
~ 2300 g

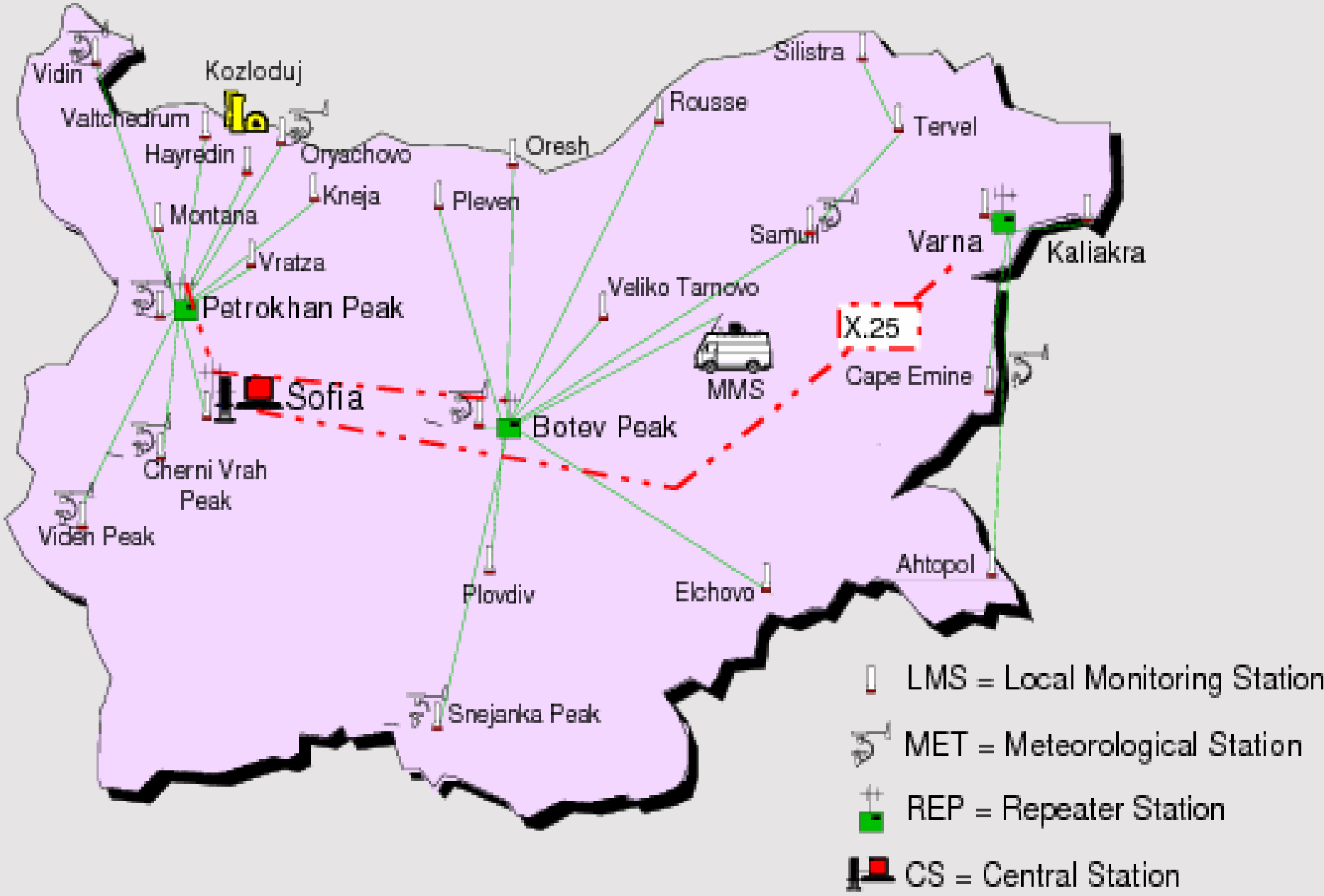
Interface ~RS-232 (up to 15m direct connection) or RS-485

Detector 2x GM tubes 20031E
Range 10nGy/h … 2mGy/h
Sensitivity 1976 counts/min ~ mGy/h
Detector background 38 counts/min ~ 38nGy/h
Energy range 40 keV …1.25 MeV

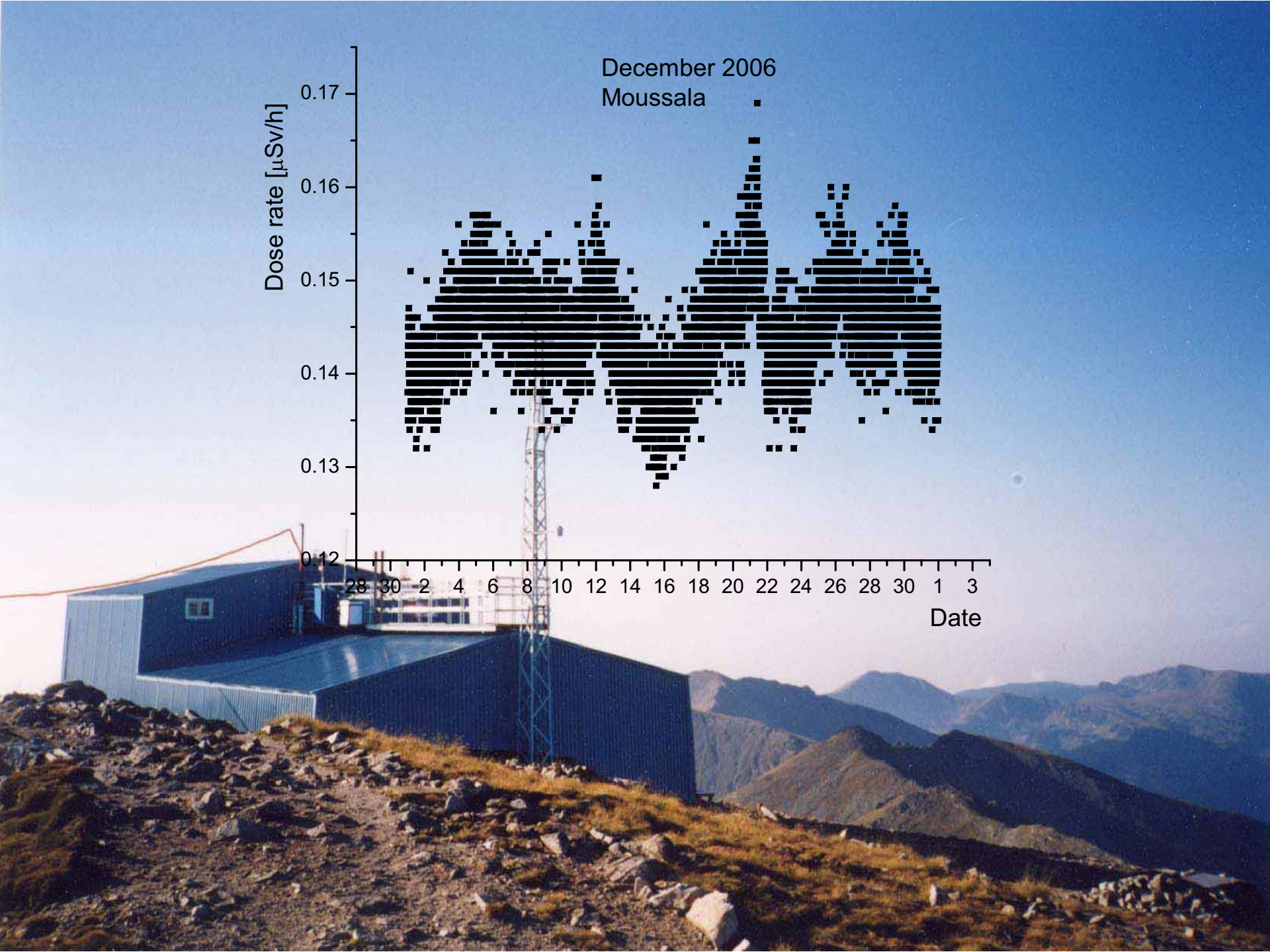


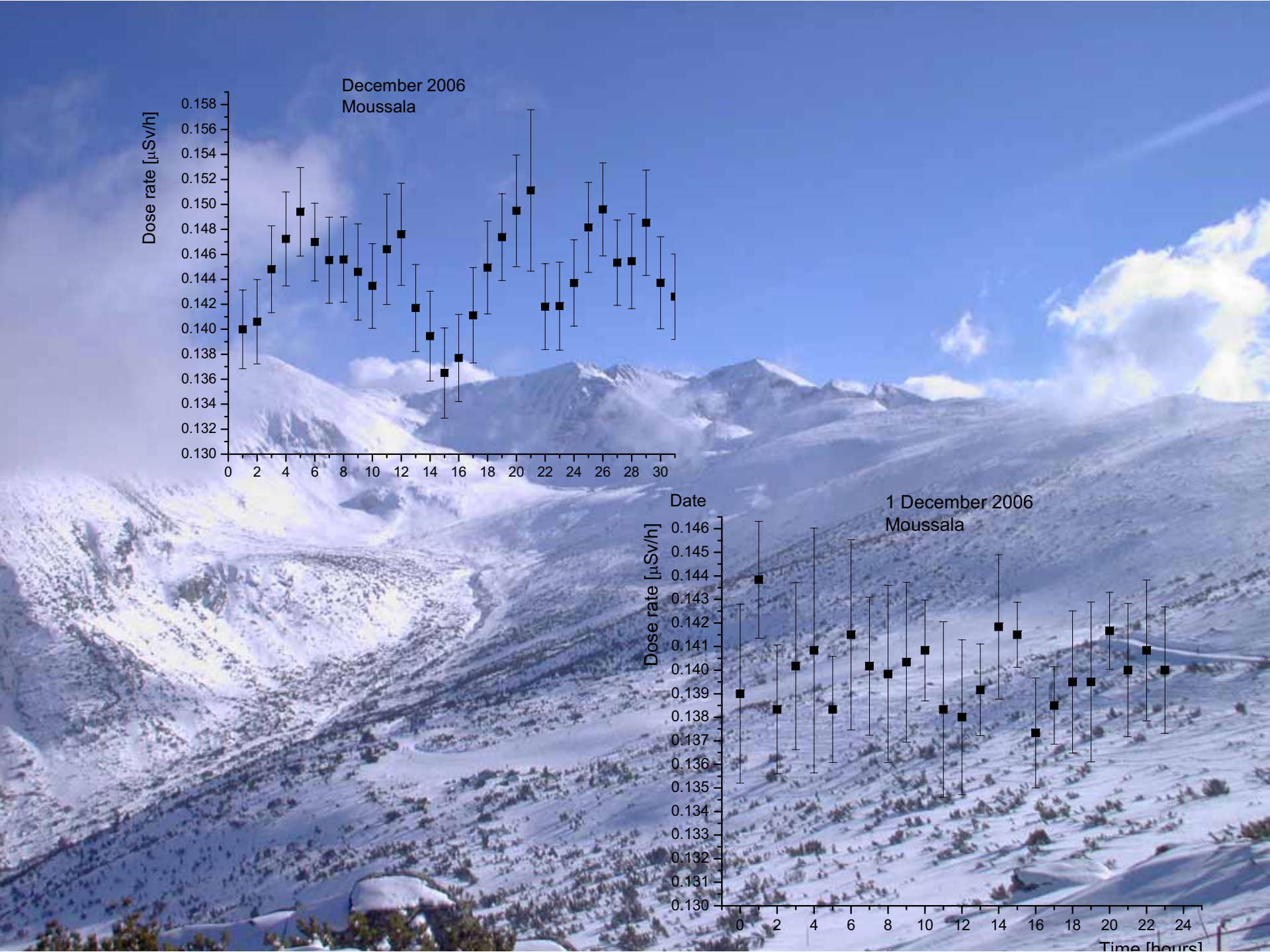
Detector GM tube 20018E
Range 0.1mGy/h … 10 Gy/h
Sensitivity 1.24 counts/min ~ µGy/h
Energy range 50 keV …1.25 MeV



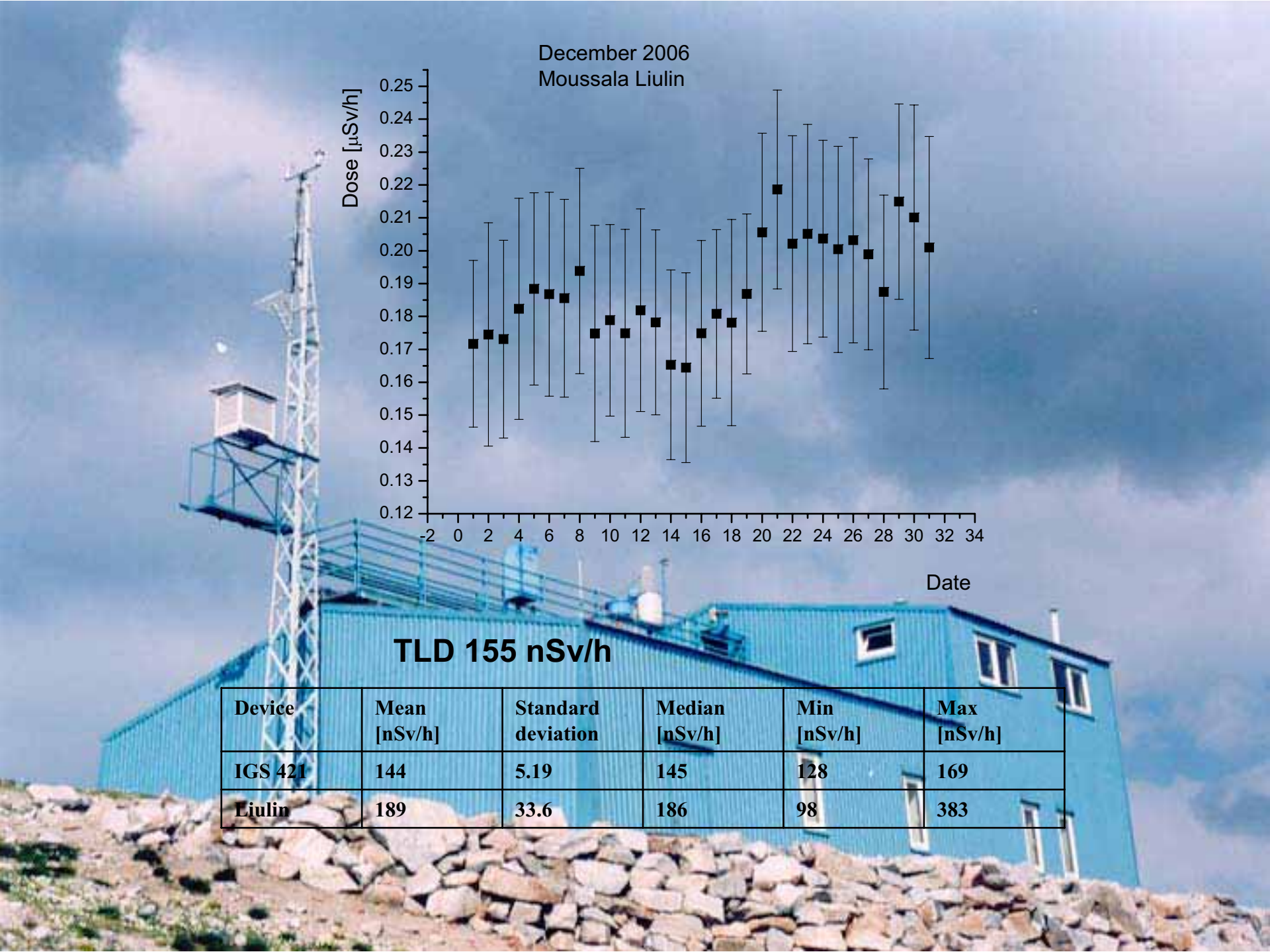


RaMo Bulgaria: Country-wide Radiation Monitoring in real-time.


December 2006
Moussala
Dose rate [μSv/h]
0.17
0.16
0.15
0.14
0.13
0.12
28 30 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 1 3
Date

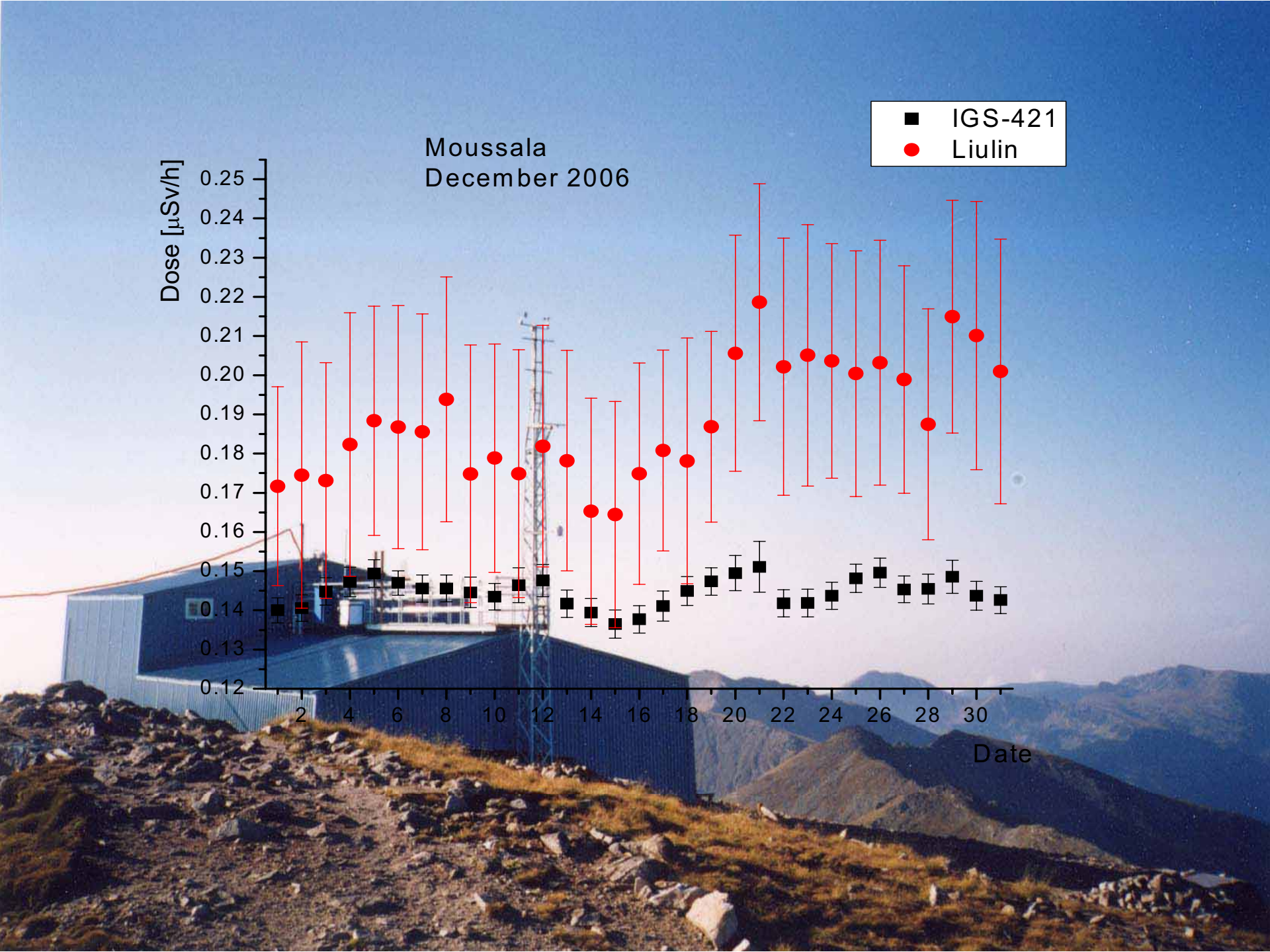

December 2006
Moussala
Dose rate [μSv/h]
0.158
0.156
0.154
0.152
0.150
0.148
0.146
0.144
0.142
0.140
0.138
0.136
0.134
0.132
0.130
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30
Date
1 December 2006
Moussala
Dose rate [μSv/h]
0.146
0.145
0.144
0.143
0.142
0.141
0.140
0.139
0.138
0.137
0.136
0.135
0.134
0.133
0.132
0.131
0.130
0 2 4 6 8 10 12 14 16 18 20 22 24
Time [hours]

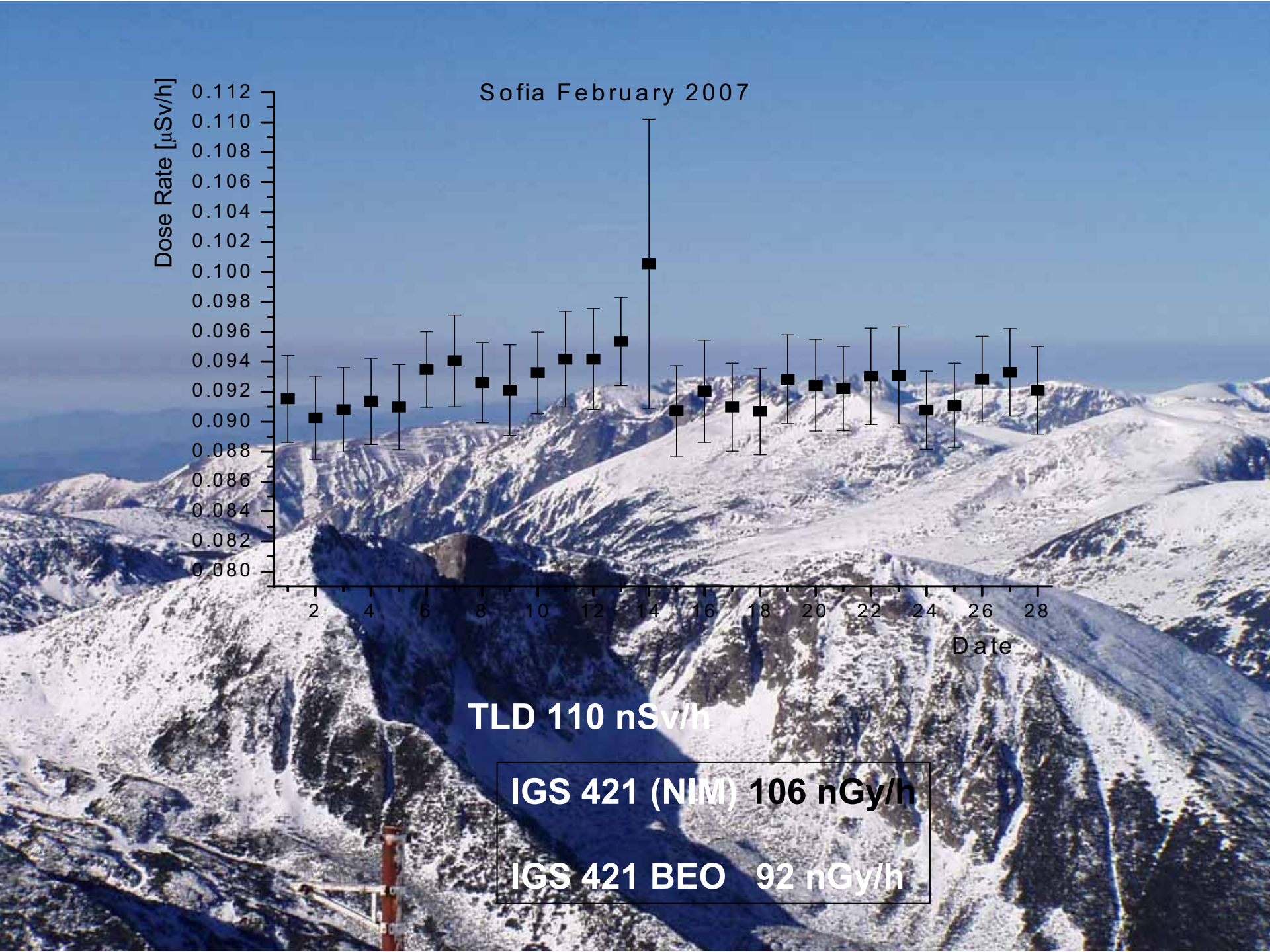

Liulin
Power
Data
Status
Liulin - 6MB
LET Spectrometer
LAN
Status



TLD 155 nSv/h

Device	Mean [nSv/h]	Standard deviation	Median [nSv/h]	Min [nSv/h]	Max [nSv/h]
IGS 421	144	5.19	145	128	169
Liulin	189	33.6	186	98	383


Moussala
December 2006
IGS-421
Liulin
Dose [μSv/h]
0.25
0.24
0.23
0.22
0.21
0.20
0.19
0.18
0.17
0.16
0.15
0.14
0.13
0.12
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
Date


Sofia February 2007
Dose Rate [μSv/h]
0.112
0.110
0.108
0.106
0.104
0.102
0.100
0.098
0.096
0.094
0.092
0.090
0.088
0.086
0.084
0.082
0.080
2
4
6
8
10
12
14
16
18
20
22
24
26
28
Date
TLD 110 nSv/h
IGS 421 (NIM) 106 nGy/h
IGS 421 BEO 92 nGy/h


We acknowledge warmly the Technidata
The staff at BEO Moussala