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SEMIANNUAL TECHNICAL SUMMARY
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VII.4 Fennoscandian seismicity, 1980-84

As a part of our efforts to develop a frame of reference for the NORESS data, included what is needed in order to assess the capabilities of that array, an extensive study is now being conducted with the purpose of investigating the natural seismicity at regional distances from the array, as well as to monitor the largest explosions in the area. The effort involves close cooperation between NORSAR and the University of Bergen and the British Geological Survey (Edinburgh), all of which are contributing with data and readings from their respective seismic stations. It is our intention to continue this cooperation in the years to come by continuously updating the data file.

The data base contains presently around 10500 individual station readings from about 430 events. About 340 of these have been classified as earthquakes, and 45 have been felt by people. The data base is complete for events above local magnitude (M_L) 2.5, while events below this level have been included only if we are reasonably sure that they are not man-made. In Fig. VII.4.1 we have shown the earthquake locations from this data base ($M_L \geq 2.0$), indicating a strong concentration of events along, and west of, the west coast of Norway. In comparing with previous seismicity studies, it should be noted that the present one has significantly better detection thresholds and precisions in event locations. It is also noteworthy that by the inclusion of stations on both sides of the North Sea (including the Shetland Islands) we have more or less removed the significant east-west bias that previous catalogues have contained, and the result (cf. Fig. VII.4.1) is an even stronger tendency towards offshore locations.

The frequency-magnitude distribution for the earthquakes plotted in Fig. VII.4.1 is shown in Fig. VII.4.2. The figure shows a b-value of around -0.9 (note: M_L magnitudes), and it can be seen from the figure that the catalogue is fairly complete down to a magnitude of about 2.3. Events with $M_L \geq 2.5$ are finally listed in Table VII.4.1.

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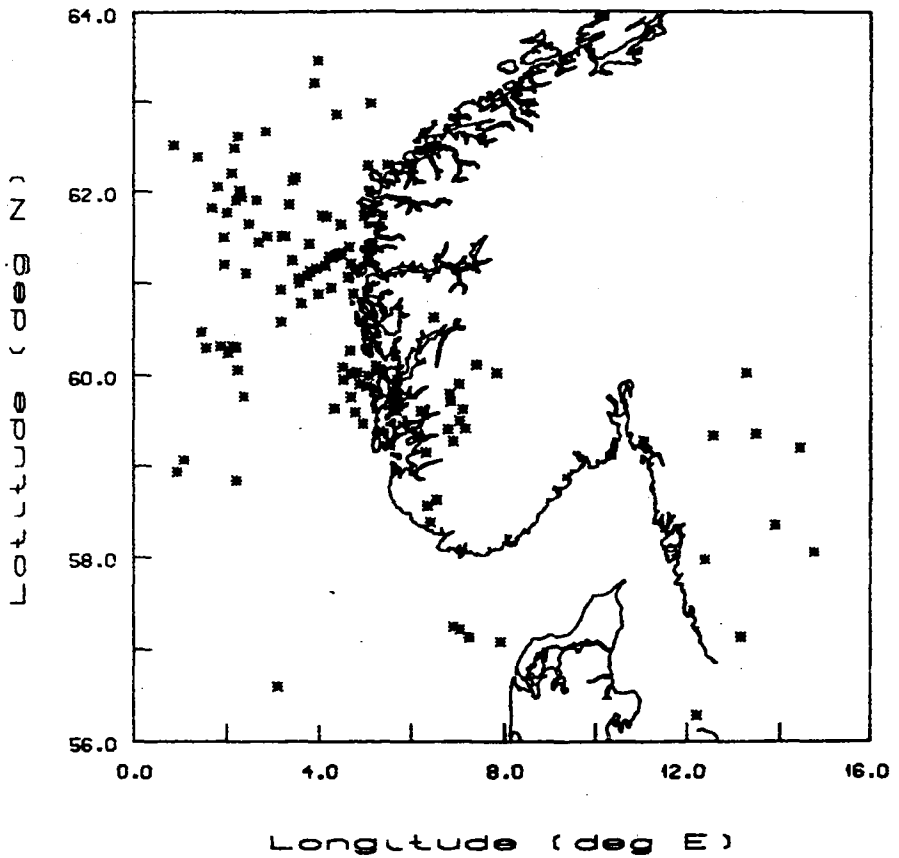

Fig. VII.4.1 Earthquake locations for earthquakes (M_L>2.0) reported from 1980 to 1984 using seismic stations in Scandinavia and in Great Britain.

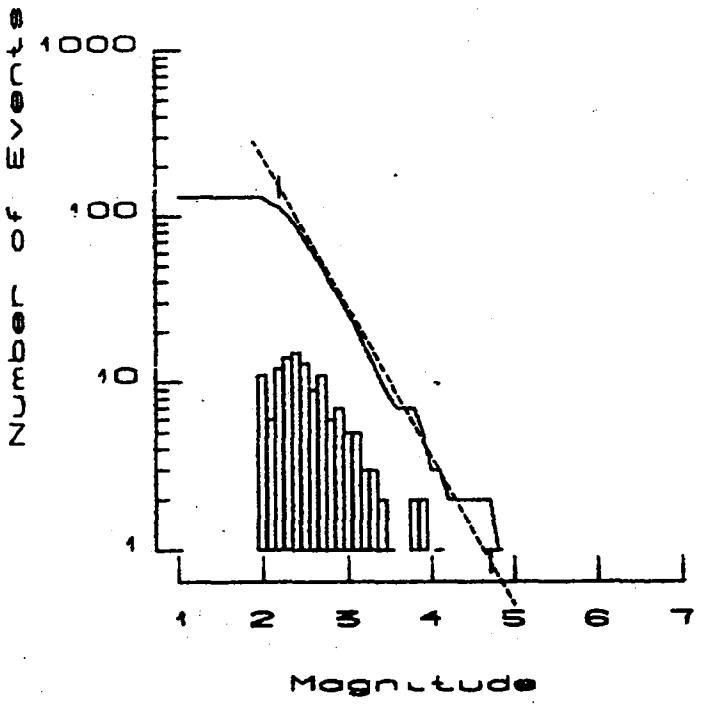

Fig. VII.4.2 Frequency-magnitude distribution for the earthquakes plotted in Fig. VII.4.1.

YEAR	DATE	AGENCY	OR.TIME	LATIT.	LONGIT.	ML-	REF	FELT	NST
1980	JAN 21	NAO	74135.7	56.276N	12.220E	2.7	NAO		14
1980	MAR 14	NAO	456 6.6	61.286N	4.320E	3.0	NAO	F	21
1980	MAR 30	NAO	35345.5	62.670N	2.817E	2.5	BGS		9
1980	APR 11	NAO	41912.4	57.974N	12.391E	2.6	NAO	F	15
1980	MAY 2	NAO	22 548.8	62.984N	5.091E	3.0	NAO		18
1980	MAY 9	NAO	234230.7	61.939N	2.311E	3.5	BGS		14
1980	MAY 27	NAO	204335.9	61.819N	1.665E	2.9	NAO		17
1980	JUN 2	NAO	164419.9	62.115N	3.412E	2.8	UPP		12
1980	JUN 5	NAO	10 8 4.9	61.251N	5.065E	2.9	UPP		5
1980	JUN 8	NAO	758 8.1	60.776N	3.608E	4.1	UPP	F	36
1980	JUN 11	NAO	72227.4	58.935N	0.953E	3.2	BGS		7
1980	JUN 18	NAO	15 625.5	60.944N	4.252E	2.9	NAO		17
1980	JUL 16	NAO	181054.2	59.394N	6.807E	2.7	UPP		5
1980	AUG 1	NAO	85821.2	59.403N	7.182E	2.7	NAO		14
1981	MAR 9	NAO	44642.0	61.722N	5.361E	3.1	BGS	F	14
1981	APR 16	NAO	63819.8	61.107N	2.410E	2.5	NAO		8
1981	APR 29	NAO	3 851.6	61.299N	4.354E	2.5	BGS		5
1981	APR 29	NAO	194045.6	59.624N	4.332E	2.8	NAO		4
1981	JUN 9	NAO	234216.8	61.046N	3.546E	2.7	NAO		4
1981	JUN 9	NAO	2347 5.9	61.419N	3.762E	2.7	NAO		7
1981	JUN 15	NAO	125247.5	60.237N	2.027E	2.9	BGS		7
1981	JUN 28	NAO	71659.8	63.217N	3.847E	2.6	BGS		3
1981	JUN 30	NAO	123210.5	58.348N	13.893E	2.0	NAO		5
1981	JUL 4	NAO	112640.7	61.153N	3.923E	2.8	NAO		7
1981	AUG 13	NAO	23 120.9	61.069N	3.735E	2.5	SNN		3
1981	SEP 6	NAO	412 0.9	57.125N	7.255E	3.9	UPP		11
1981	OCT 8	NAO	153535.7	59.594N	6.221E	2.5	NAO		5
1981	NOV 11	NAO	24851.5	57.129N	13.155E	2.9	UPP	F	10
1981	NOV 30	NAO	11 156.5	61.498N	1.914E	3.1	BGS		4
1982	JAN 4	NAO	1822 6.9	59.217N	5.561E	2.9	NAO	F	14
1982	FEB 6	NAO	45042.5	61.057N	4.619E	2.7	NAO		5
1982	FEB 7	NAO	136 3.3	61.321N	4.400E	2.5	NAO		5
1982	FEB 9	NAO	132326.1	59.890N	4.881E	2.6	NAO		5
1982	MAR 15	NAO	135711.5	60.013N	13.273E	2.5	NAO	F	14
1982	MAR 17	NAO	223314.8	62.202N	2.070E	3.1	NAO		14
1982	APR 7	NAO	18 837.9	59.611N	7.110E	3.1	BGS	F	19
1982	APR 19	NAO	94926.0	61.718N	4.133E	3.9	BGS	F	21
1982	APR 20	NAO	131929.7	59.143N	6.332E	3.8	BGS	F	20
1982	MAY 10	NAO	211641.6	60.090N	5.243E	2.6	NAO		11
1982	MAY 10	NAO	2125 9.6	60.037N	5.303E	2.6	NAO		11
1982	MAY 30	NAO	1 250.7	61.444N	2.675E	2.7	BGS		5
1982	JUN 11	NAO	029 3.3	56.585N	3.106E	2.7	BGS		9
1982	JUL 29	NAO	017 2.5	60.308N	2.131E	4.8	BGS	F	63
1982	AUG 6	NAO	74124.9	60.615N	6.492E	3.4	NAO	F	18
1982	NOV 4	NAO	656 9.1	62.487N	2.127E	2.5	BGS		8
1982	NOV 23	NAO	165837.6	60.576N	3.177E	2.5	NAO		5
1982	DEC 6	NAO	144332.5	60.020N	4.820E	2.5	NAO		14
1982	DEC 15	NAO	64441.7	62.284N	5.454E	3.8	NAO	F	26
1982	DEC 27	NAO	1815 6.1	61.198N	1.935E	3.1	NAO		6
1983	FEB 13	NAO	245 3.5	61.243N	3.413E	2.5	NAO		15
1983	FEB 24	NAO	41947.0	60.314N	1.870E	3.0	NAO		19
1983	MAR 8	NAO	184357.3	59.725N	5.632E	4.7	NAO	F	25
1983	MAR 8	NAO	1852 6.8	59.756N	5.637E	3.0	NAO		14
1983	MAR 31	NAO	44624.0	61.397N	5.139E	2.8	NAO		23
1983	MAY 8	NAO	174738.9	61.282N	4.202E	2.9	NAO		7
1983	MAY 12	NAO	41557.1	59.780N	6.838E	3.3	NAO		16
1983	JUL 12	NAO	19 427.7	58.054N	14.762E	2.5	NAO	F	9
1983	AUG 8	NAO	1557 9.6	61.734N	4.038E	3.2	NAO		9
1983	OCT 1	NAO	75135.2	60.293N	2.204E	2.8	NAO		13
1983	OCT 7	NAO	94042.8	59.264N	6.919E	2.6	NAO		6
1983	OCT 7	NAO	19 357.1	63.471N	3.928E	3.0	NAO		12
1983	OCT 29	NAO	1751 4.9	59.883N	7.038E	3.3	NAO	F	7
1983	DEC 11	NAO	74546.4	62.617N	2.205E	2.7	NAO		12
1983	DEC 16	NAO	21 923.8	62.857N	4.343E	3.4	NAO		19
1984	JAN 1	NAO	211553.5	59.579N	4.788E	2.7	NAO		8
1984	JAN 6	NAO	95119.7	59.453N	4.953E	2.6	NAO		7
1984	JAN 7	NAO	9 811.8	57.209N	7.044E	3.2	NAO		17
1984	JAN 13	NAO	25346.9	61.179N	4.128E	2.8	NAO		4
1984	FEB 5	NAO	11 817.6	60.997N	3.564E	2.7	NAO		8
1984	FEB 14	NAO	104217.6	61.904N	2.635E	3.3	NAO		9
1984	MAR 1	NAO	132455.6	60.003N	4.764E	2.6	NAO		7
1984	MAR 1	NAO	154138.4	60.005N	4.683E	2.6	NAO		8

Table VII.4.1 Earthquakes with $M_L \geq 2.5$ from the data base plotted in Fig. VII.4.1.