

Ecography

ECOG-04041

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Supplementary material

Appendix 1

Table A1. Overview of the results of pairwise comparisons within regions and among radar systems. Names in the column “pair compared” refer to names given in Tab. 1. (some abbreviated). The types of the radar systems are described in the Methods section (WR = weather radar, FBR = fixed beam radar, VBR = vertical beam radar, RBR = vertically rotating beam radar, RWP = radar wind profiler). For Northern Germany comparisons were separated by year and season (e.g. 09aut => autumn 2009, 09spr => spring 2009). Variables with the subscript “tot” give values including all height ranges covered by a system, the subscript “overlap” gives values for the overlapping height range between systems compared (cf. Fig. S1). N gives the number of nights included in the sample. MTR is given in birds/(km*hour). MTR1 refers to the first site given under “pairs compared”, MTR2 to the second site.

region	pairs compared	type of comparison	distance	r ² _{tot}	n _{tot}	r ² _{overlap}	n _{overlap}	MTR1 _{tot}	MTR2 _{tot}	MTR1 _{overlap}	MTR2 _{overlap}
Northern Germany	Ham-Ros-09aut	WR vs WR	149	0.70	78	0.71	78	535	619	501	555
Northern Germany	Ham-Ros-09spr	WR vs WR	149	0.70	91	0.71	91	616	366	587	333
Northern Germany	Ham-Ros-10aut	WR vs WR	149	0.70	88	0.76	88	450	394	423	345
Northern Germany	Ham-Ros-10spr	WR vs WR	149	0.70	79	0.81	79	847	613	819	548
Northern Israel	Dalton - Meron	WR vs WR	6.5	0.20	13	0.20	13	1035	2128	1035	2128
Bay of Biscay	Kapildui – Mom.	WR vs WR	183	0.12	18	0.03	17	408	413	396	282
North of the Alps	Mont. – Mem.	WR vs WR	252	0.48	62	0.47	62	467	697	445	376
Northern Germany	Ham-Rod-09aut	WR vs FBR	146	0.56	75	0.57	75	552	108	517	74
Northern Germany	Ham-Rod-09spr	WR vs FBR	146	0.71	94	0.64	94	597	410	569	317
Northern Germany	Ham- Feh -10aut	WR vs FBR	128	0.57	89	0.52	89	444	168	418	130
Northern Germany	Ham- Feh -10spr	WR vs FBR	128	0.69	78	0.69	78	815	440	787	297
Northern Germany	Ros- Rod-09aut	WR vs FBR	70	0.70	75	0.66	75	637	108	571	74
Northern Germany	Ros- Rod-09spr	WR vs FBR	70	0.61	92	0.54	92	362	417	330	323
Northern Germany	Ros- Feh -10aut	WR vs FBR	65	0.69	86	0.66	86	401	173	352	135
Northern Germany	Ros- Feh-10spr	WR vs FBR	65	0.76	80	0.80	80	573	427	513	287
North of the Alps	Mont. – Prov.	WR vs FBR	61	0.62	52	0.60	52	470	493	330	493
North of the Alps	Mont. – Peuch.	WR vs FBR	16	0.85	68	0.85	68	442	862	422	861
North of the Alps	Mont. – Brem.	WR vs FBR	219	0.54	48	0.56	48	573	261	547	220
North of the Alps	Mem. – Peuch.	WR vs FBR	257	0.51	78	0.52	78	710	862	404	862
North of the Alps	Mem. – Prov.	WR vs FBR	300	0.32	57	0.36	57	662	490	252	489
North of the Alps	Mem. – Brem.	WR vs FBR	61	0.72	51	0.7	51	817	271	623	270
Flanders	Jabbek. - Herzele	WR vs VBR	50	0.47	46	0.44	46	259	567	237	339
Northern Israel	Dalton - Kisra	WR vs VBR	24	0.27	13	0.05	13	1035	25530	442	1077
Northern Israel	Meron - Kisra	WR vs VBR	19	0.21	29	0.43	29	7126	69942	3389	2773
Bay of Biscay	Kapildui - Bilbao	WR vs RWP	78	0.20	9	0.81	8	363	2719	210	2461
Flanders	Jabbeke - Offshore	WR vs RBR	37	0.29	55	0.36	53	228	63	215	41
Flanders	Offshore – Herz.	RBR vs VBR	75	0.64	44	0.62	44	75	585	46	349
North of the Alps	Peuch. – Prov.	FBR vs FBR	47	0.74	65	0.72	65	846	457	684	457
North of the Alps	Peuch. – Brem.	FBR vs FBR	229	0.68	60	0.66	60	964	243	963	141
North of the Alps	Prov. – Brem.	FBR vs FBR	274	0.47	48	0.44	48	548	260	548	97

Figure A1. Height range covered by each radar at the different locations. The colour refers to the region. The dot indicates the altitude of the radar above sea level, and the bar represents the height ranges included in the analysis with all heights. A second analysis included pairwise overlapping height ranges.

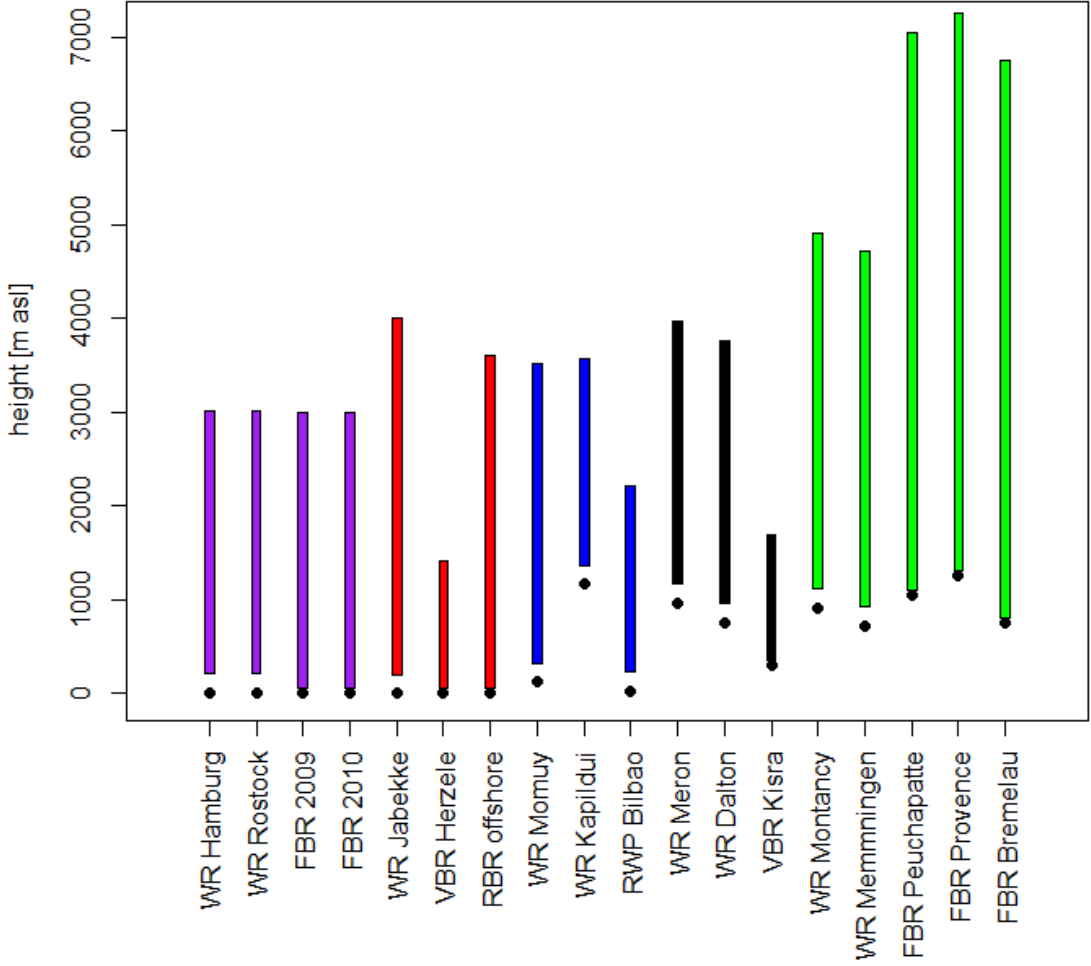
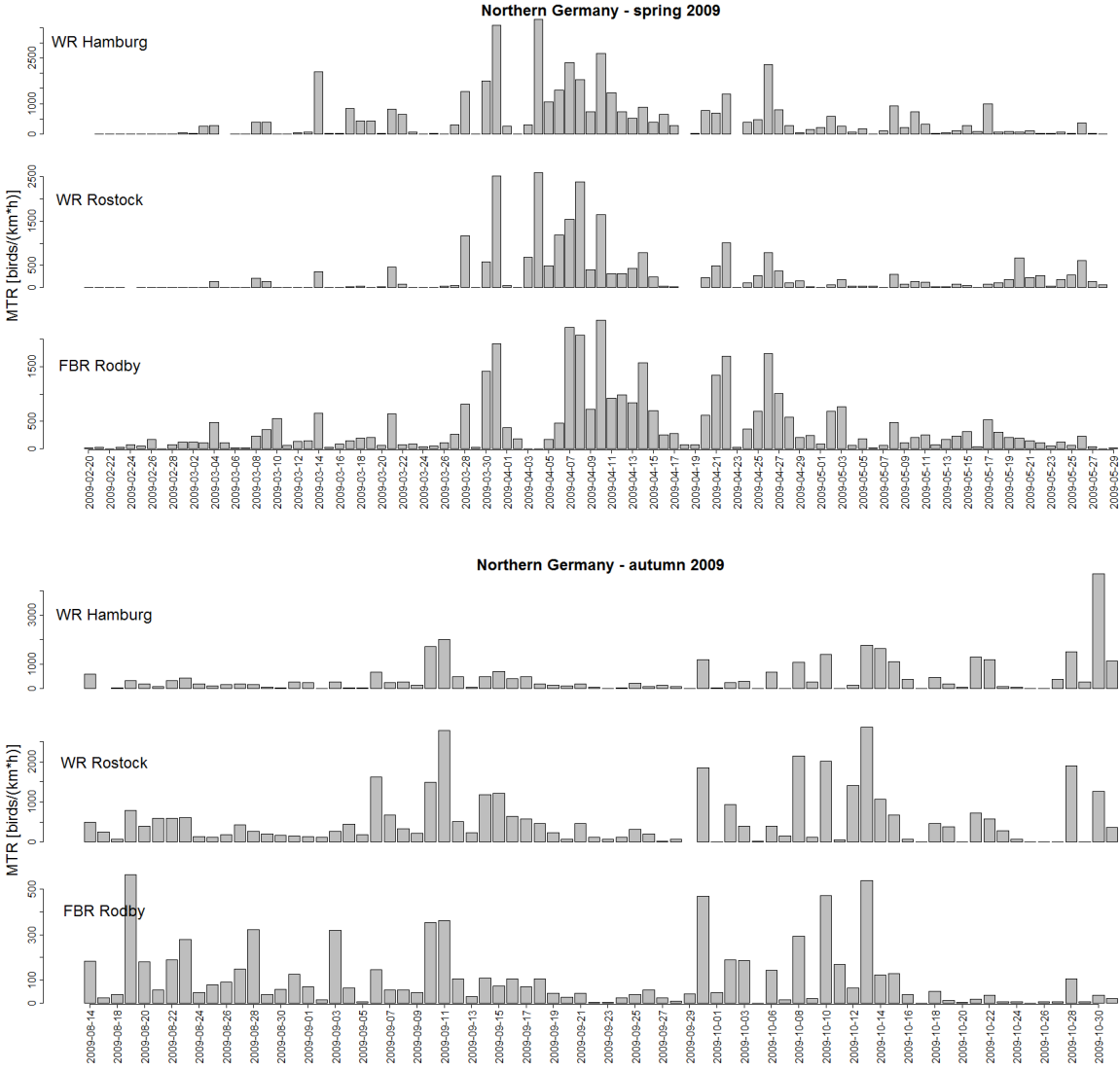
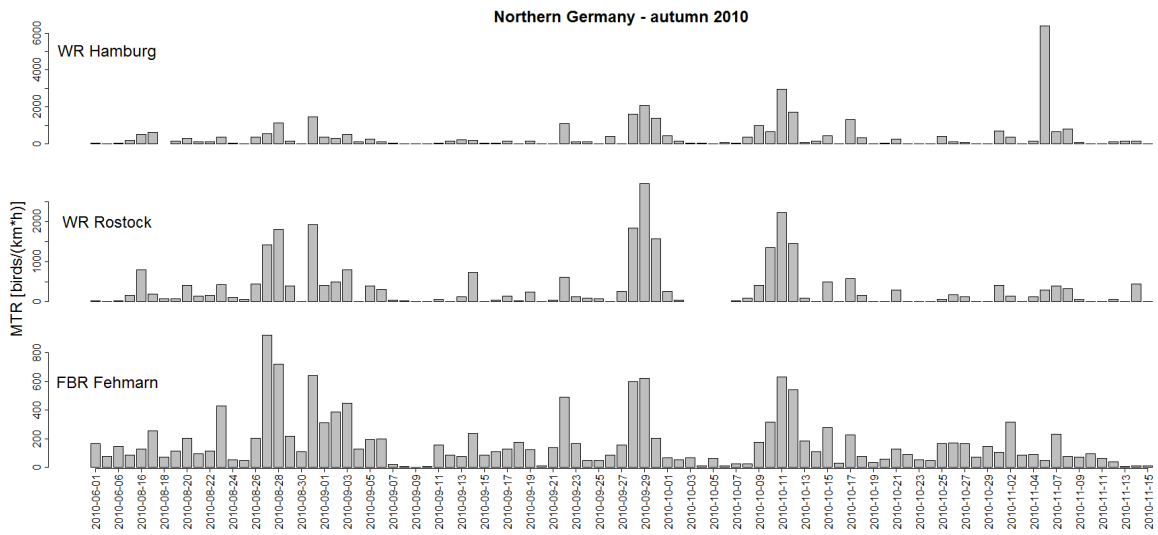
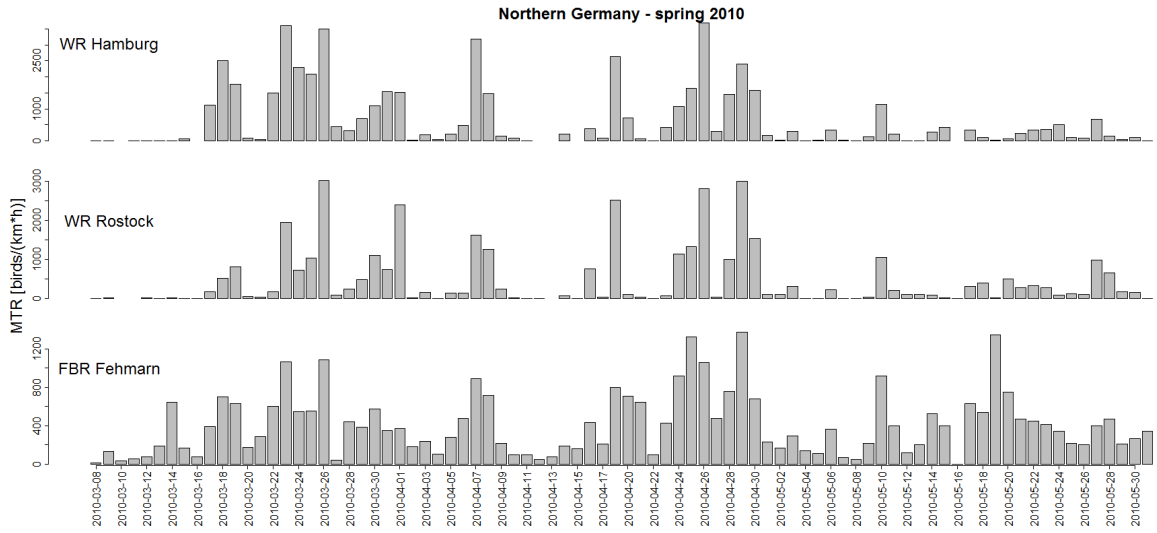
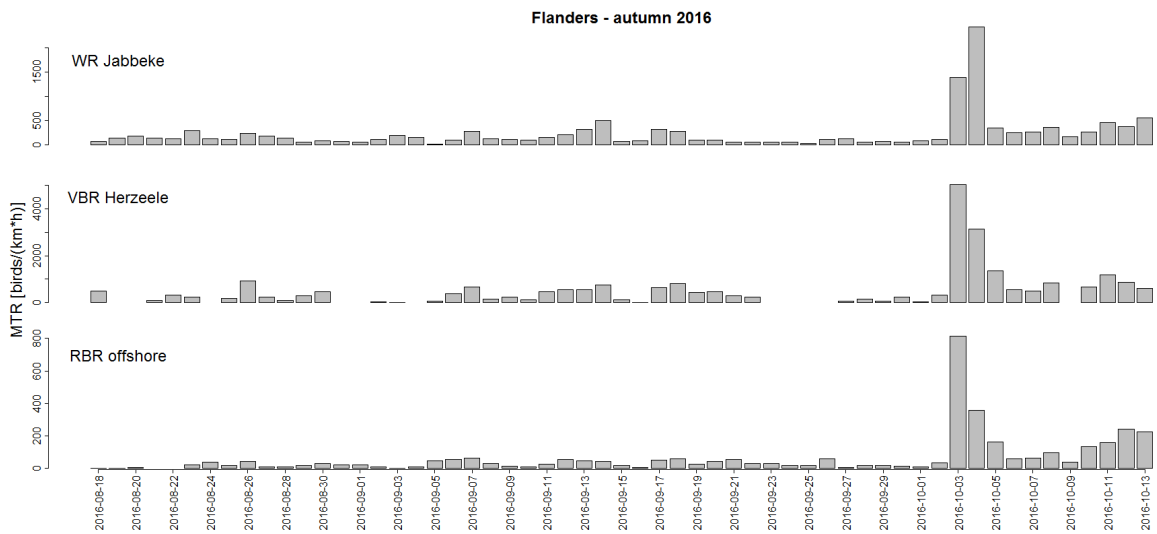


Figure A2. Seasonal course of nocturnal bird migration for the five study regions (Northern Germany, Flanders, Bay of Biscay, North of the Alps, Northern Israel). Parallel measurements per season (Northern Germany) and region, respectively, are combined in a sub-plot. Given are mean MTR's per night. Names to the left refer to the sites given in table 1. Gaps in the seasonal course indicate no data available.

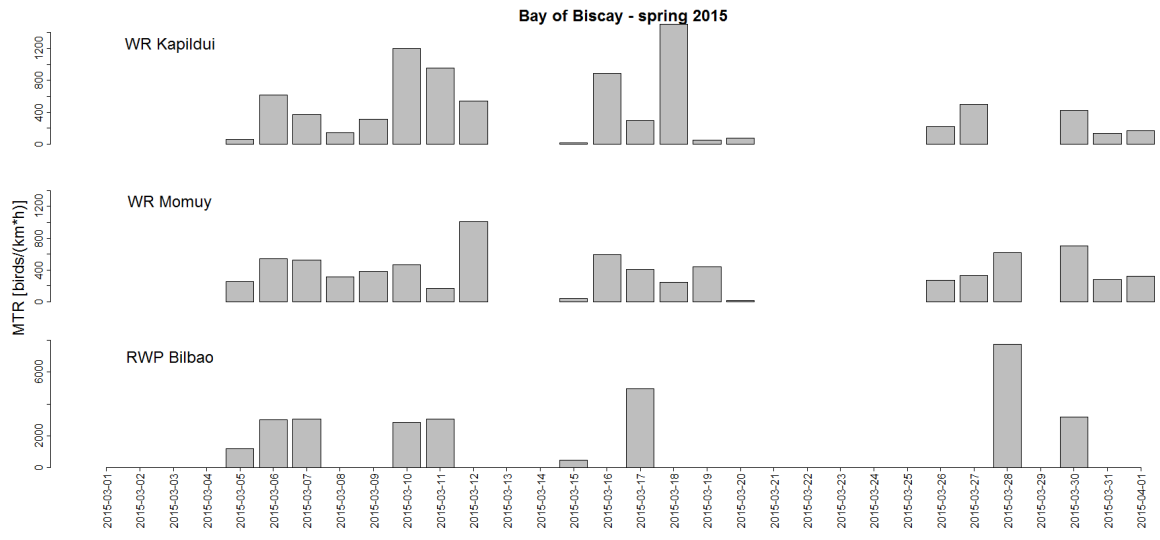




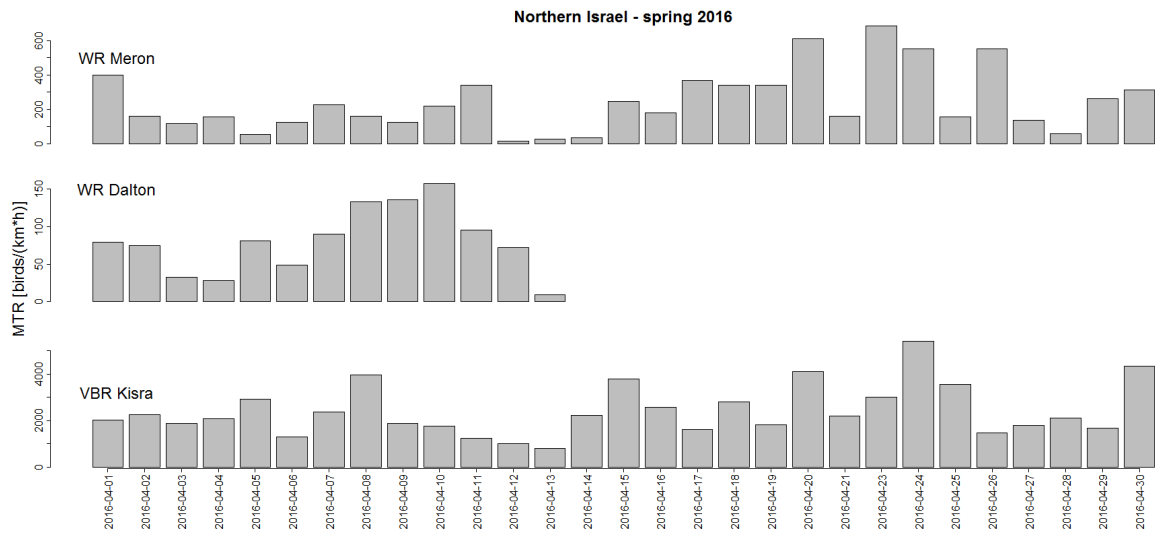
Flanders



Bay of Biscay



Northern Israel



North of the Alps

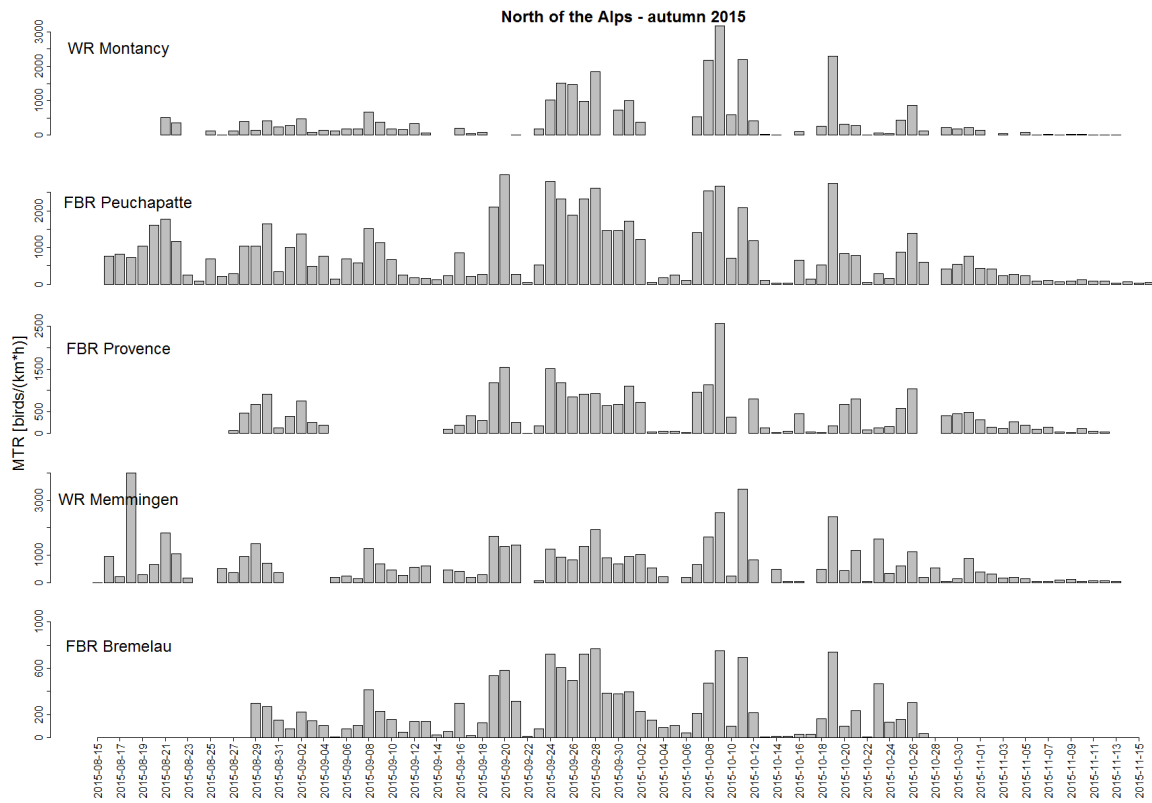


Figure A3. Local topographical situation of the three radar sites in northern Israel. Blue shading represents the range surveyed by the different radar systems (see Table 1). Important numbers of nocturnal migrants flew below the top of mount Meron, and thus, were not detected by the weather radars at Meron and Dalton.

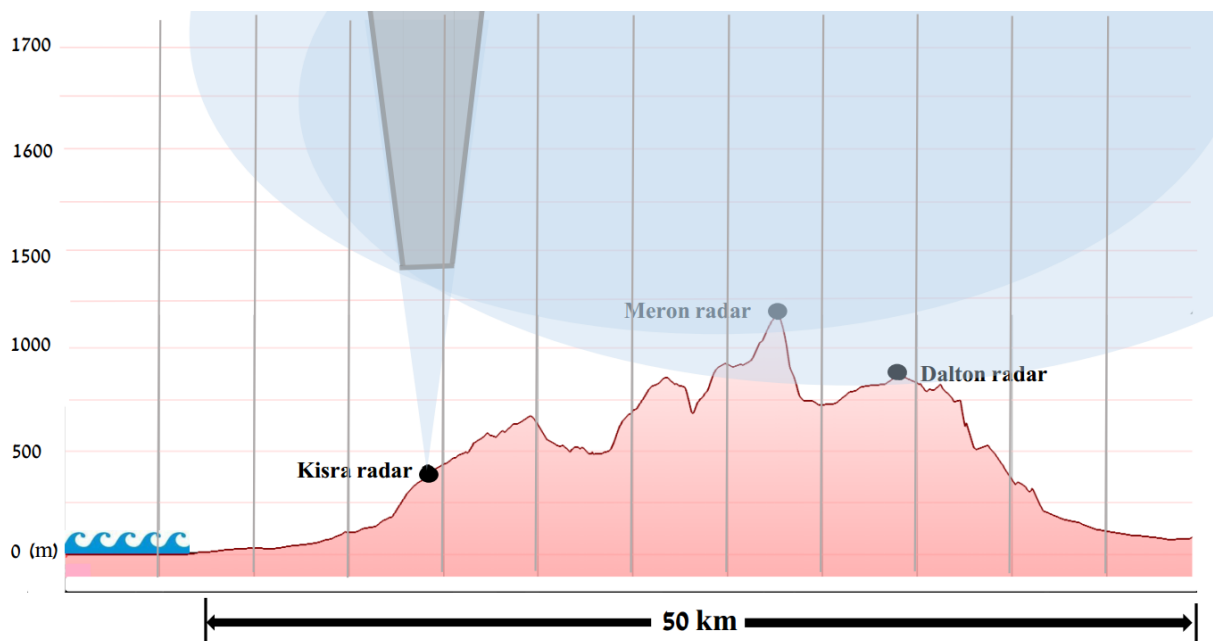


Figure A4. Height distribution of nocturnal migration in Northern Israel during the study period. Most birds were recorded at Kisra (red), while only few bird were detected at higher altitudes at Meron (light blue) and Dalton (dark blue).

