

Data used to compare four radars systems that monitor bird migration in a field validation campaign in southern Sweden 2015. Four systems were compared: a weather radar (WR), a BirdScan radar (BS), a marine radar (MR) and a tracking radar (TR). For details see:

Nilsson, Cecilia; Dokter, Adriaan; Schmid, Baptiste; Scacco, Martina; Verlinden, Liesbeth; Bäckman, Johan; Haase, Günther; Dell'Omo, Giacomo; Chapman, Jason; Leijnse, Hidde & Liechti, Felix (2018) **Field validation of radar systems for monitoring bird migration**. Journal of Applied Ecology, in press.

Files:

mtr_gs_track.csv Mean migration traffic rate (MTR), ground speed (GS) and track direction (track) per night during the campaign. Data is divided in "low" 200-800m and "high" 800-1400m altitude groups.

Includes:

- **Sunset date** - Date at sunset
- **Altitude** - High (800-1400m above sea level) or low (200-800m above sea level) altitude
- **Datenr** - Nights numbered from 1 to 67
- **WR MTR** - Weather radar mean nightly MTR
- **MR MTR** - Marine radar mean nightly MTR
- **BSL MTR** - BirdScan (long pulse) mean nightly MTR
- **BSS MTR** - BirdScan (short pulse) mean nightly MTR
- **Ringing nr** - Total number of birds ringed at Falsterbo ringing station the following morning
- **SMHI max rain** - Max amount of rain measured at either weather station (from smhi.se)
- **Rain (Y/N)** - If any rain measured at all (yes/no)
- **WR track n** - Number of scans included in weather radar mean track calculation. Only scans with dens>5 included
- **WR track mean** - Weather radar circular mean track direction
- **WR track sd** - Weather radar circular standard deviation of mean track direction
- **TR track n** - Number of targets included in tracking radar mean track calculation. Only nights with more than 10 birds tracked in altitude group included
- **TR track mean** - Tracking radar circular mean track direction
- **TR track sd** - Tracking radar circular standard deviation of mean track direction
- **BSL track n** - Number of targets included in BirdScan (long pulse) mean track calculation. Only nights with more than 10 birds tracked (in altitude group) included
- **BSL track mean** - BirdScan (long pulse) circular mean track direction
- **BSL track sd** - BirdScan (long pulse) circular standard deviation of mean track direction
- **BSS track n** - Number of targets included in BirdScan (short pulse) mean track calculation. Only nights with more than 10 birds tracked (in altitude group) included
- **BSS track mean** - BirdScan (short pulse) circular mean track direction
- **BSS track sd** - BirdScan (short pulse) circular standard deviation of mean track direction
- **WR groundspeed n** - Number of scans included in weather radar mean groundspeed calculation. Only scans with dens>5 included
- **WR mean groundspeed** - Weather radar mean groundspeed
- **WR groundspeed sd** - Weather radar standard deviation of mean groundspeed
- **BSL groundspeed n** - Number of targets included in BirdScan (long pulse) mean groundspeed calculation. Only nights with more than 10 birds tracked in altitude group included
- **BSL mean groundspeed** - BirdScan (long pulse) mean groundspeed
- **BSL groundspeed sd** - BirdScan (long pulse) standard deviation of mean groundspeed
- **TR groundspeed n** - Number of targets included in tracking radar mean groundspeed calculation. Only nights with more than 10 birds tracked in altitude group included

- **TR mean groundspeed** - Tracking radar mean groundspeed
- **TR groundspeed sd** - Tracking radar standard deviation of mean groundspeed
- **MR groundspeed n** - Number of targets included in marine radar mean groundspeed calculation
- **MR mean groundspeed** - Marine radar mean groundspeed
- **MR groundspeed sd** - Marine radar standard deviation of mean groundspeed
- **BSS groundspeed n** - Number of targets included in BirdScan (short pulse) mean groundspeed calculation. Only nights with more than 10 birds tracked in altitude group included
- **BSS mean groundspeed** - BirdScan (short pulse) mean groundspeed
- **BSS groundspeed sd** - BirdScan (short pulse) standard deviation of mean groundspeed

height.csv: Mean migration traffic rate (MTR) over two different time periods (entire sampling period: 1 sep-31 oct 2015 and period of MR deployment: 5 – 16 oct 2015) divided into 200 m altitude bins.

- **Height bin** - Height bin in m above sea level, value denotes middle of height bin (eg: 300 = data from 200-400m asl)
- **WR MTR** - Weather radar mean MTR for each height bin during entire sampling period
- **WR MTR proportion** - Proportion of mean MTR in each height bin, Weather radar, entire period
- **BS MTR** - BirdsScan mean MTR for each height bin during entire sampling period, short pulse for bins 300-700 m and long pulse for bins 900 m and up
- **BS proportion** - Proportion of mean MTR in each height bin, BirdScan, entire period
- **WR MTR 5-16oct** - Weather radar mean MTR for each height bin between 5 - 16 October
- **WR MTR proportion 5-16oct** - Proportion of mean MTR in each height bin, Weather radar, 5 - 16 October
- **BS MTR 5-16oct** - BirdsScan mean MTR for each height bin between 5 -16 October, short pulse for bins 300-700 m and long pulse for bins 900 m and up
- **BS proportion 5-16oct** - Proportion of mean MTR in each height bin, BirdScan, 5 - 16 October
- **MR MTR 5-16oct** - Marine radar mean MTR for each height bin between 5 -16 October
- **MR proportion 5-16oct** - Proportion of mean MTR in each height bin, marine radar, 5 - 16 October