Figure S1: Timeseries display mean values of all stations in the respective region and the mean value of each model in this region in the grid cells of the stations.
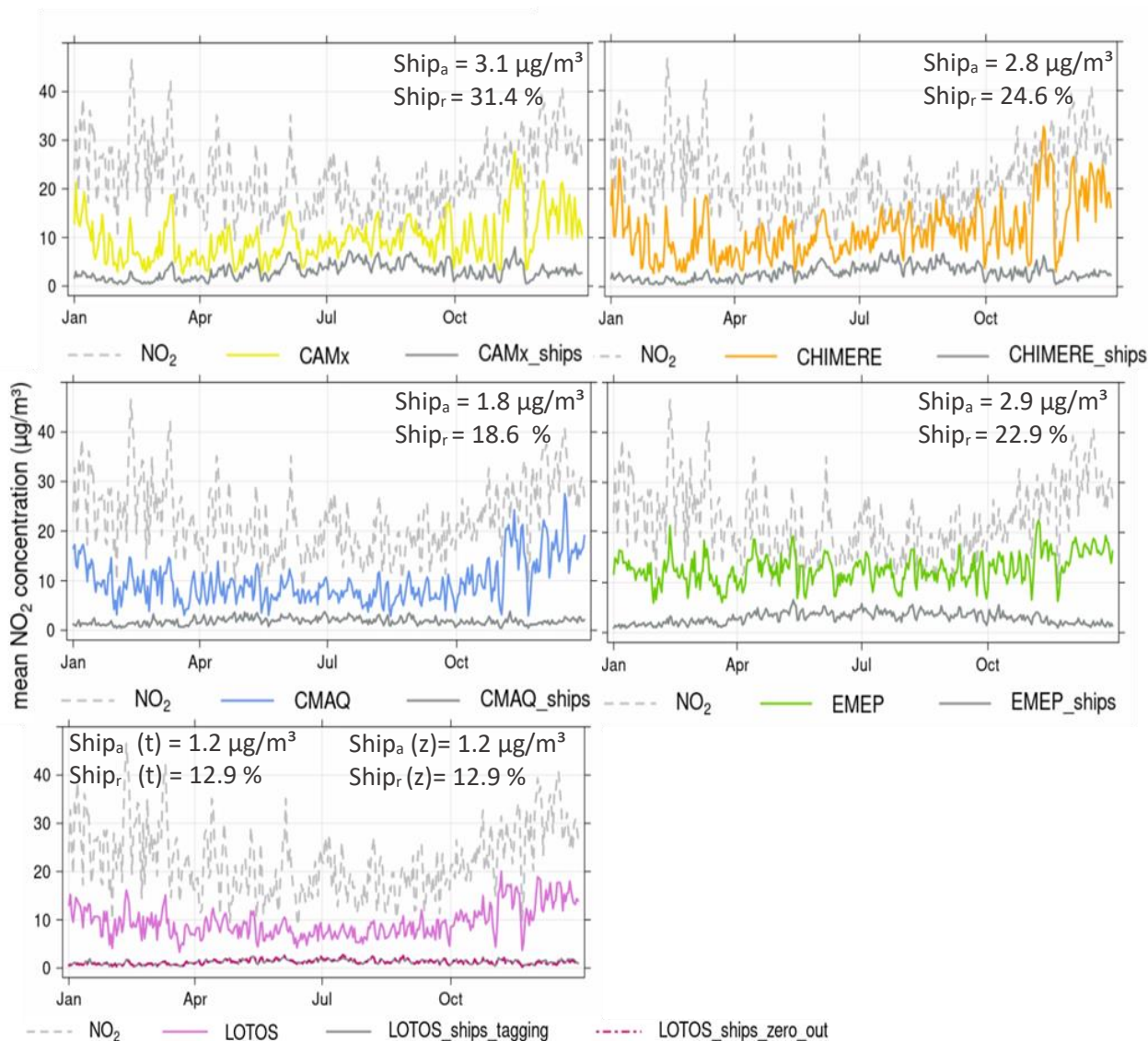
Figure S2: Time series with daily mean values of NO₂ for 2015 in panel "west". (a) = CAMx, (b) = CHIMERE, (c) = CMAQ, (d) = EMEP, (e) = LOTOS-EUROS. Dashed grey line = measured data, colored lines = modelled data, grey line = modelled ship contribution. Correlation between modelled and measured data for hourly total emission data for 2015: CAMx: R = 0.23, CHIMERE: R = 0.25, CMAQ: R = 0.2, EMEP: R = 0.23, LOTOS-EUROS: R = 0.26.
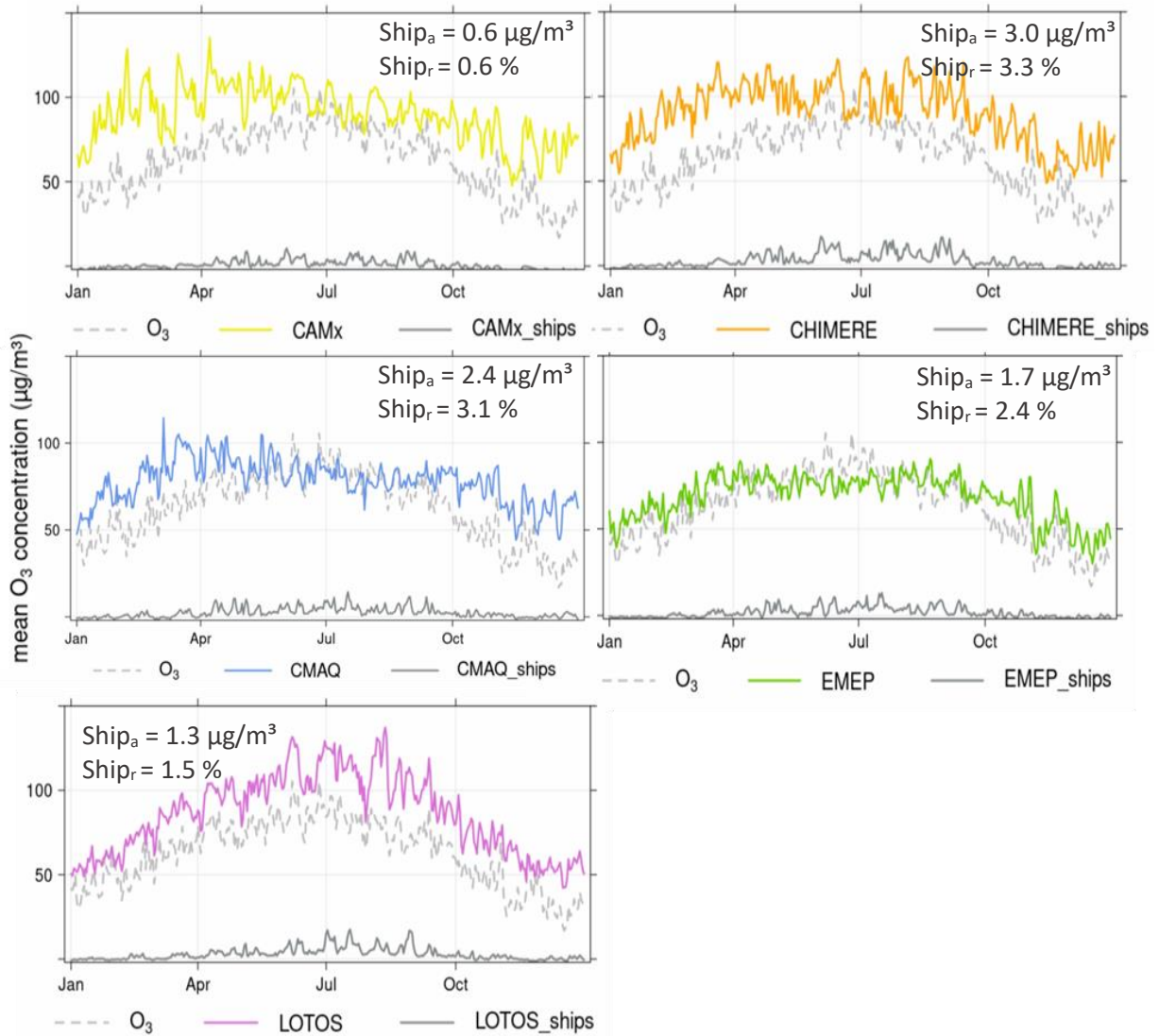
Figure S3: Time series with daily mean values of O₃ for 2015 in panel "west". (a) = CAMx, (b) = CHIMERE, (c) = CMAQ, (d) = EMEP, (e) = LOTOS-EUROS. Dashed grey line = measured data, colored lines = modelled data, grey line = modelled ship contribution. Correlation between modelled and measured data for hourly total emission data for 2015: CAMx R = 0.57, CHIMERE R = 0.60, CMAQ: R = 0.58, EMEP: R = 0.23, LOTOS-EUROS: R = 0.65.
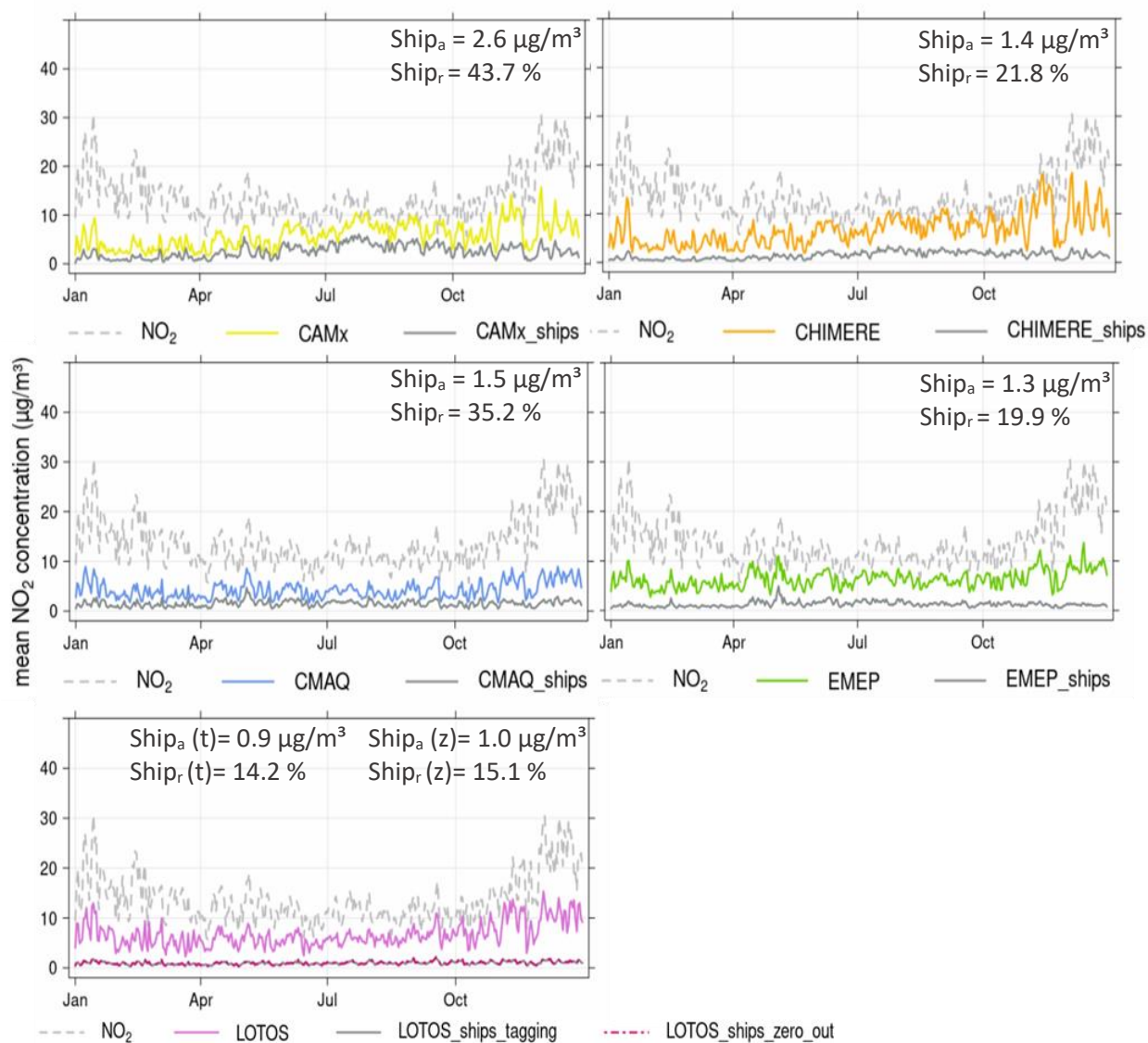
Figure S4: Time series with daily mean values of NO₂ for 2015 in panel "south". (a) = CAMx, (b) = CHIMERE, (c) = CMAQ, (d) = EMEP, (e) = LOTOS-EUROS. Dashed grey line = measured data, colored lines = modelled data, grey line = modelled ship contribution. Correlation between modelled and measured data for hourly total emission data for 2015: CAMx: R = 0.20, CHIMERE: R = 0.26, CMAQ: R = 0.15, EMEP: R = 0.24, LOTOS-EUROS: R = 0.22.
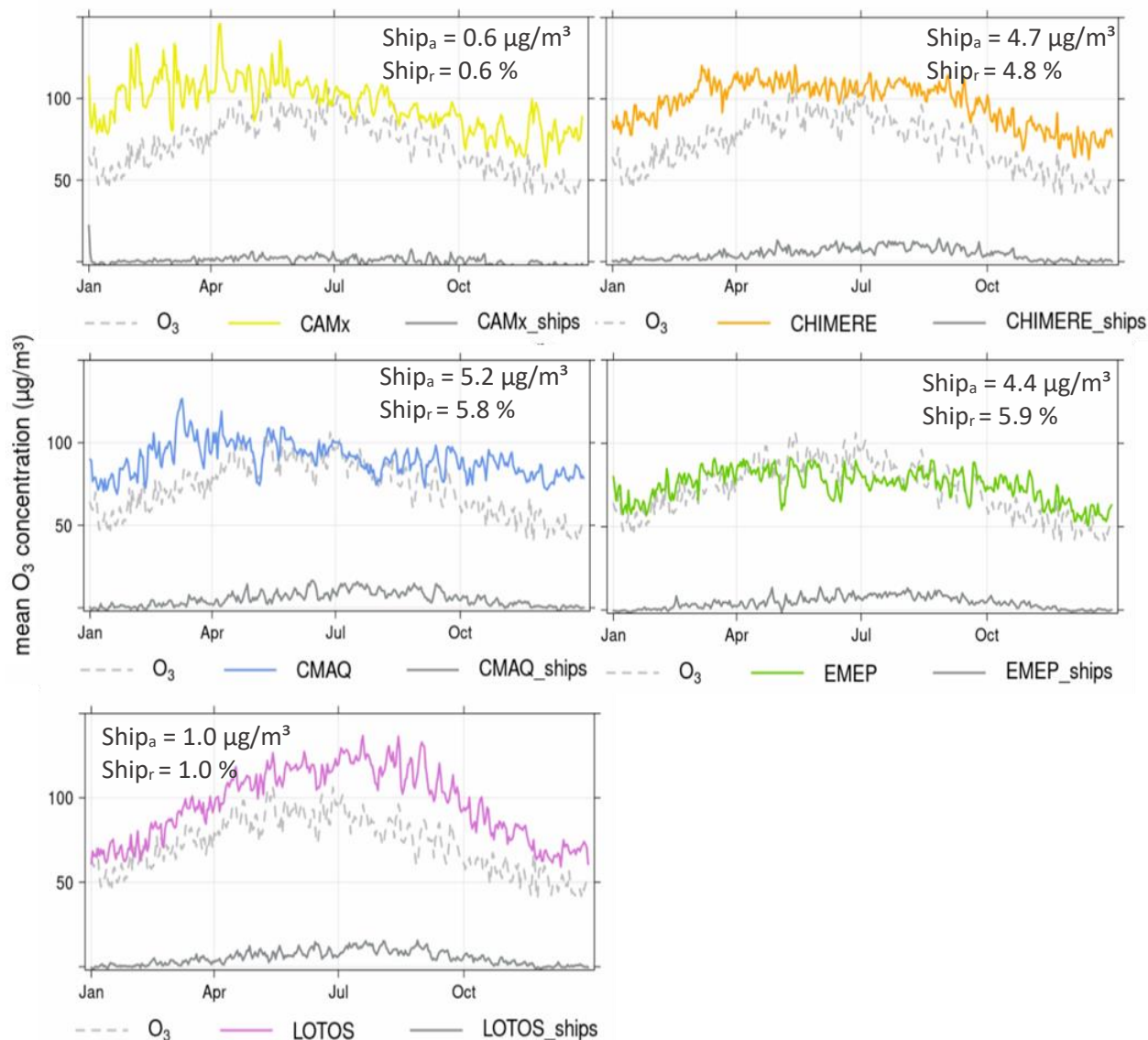
Figure S5: Time series with daily mean values of O₃ for 2015 in panel "south". (a) = CAMx, (b) = CHIMERE, (c) = CMAQ, (d) = EMEP, (e) = LOTOS-EUROS. Dashed grey line = measured data, colored lines = modelled data, grey line = modelled ship contribution. Correlation between modelled and measured data for hourly total emission data for 2015: CAMx: R = 0.47, CHIMERE: R = 0.56, CMAQ: R = 0.44, EMEP: R = 0.52, LOTOS-EUROS: R = 0.53.
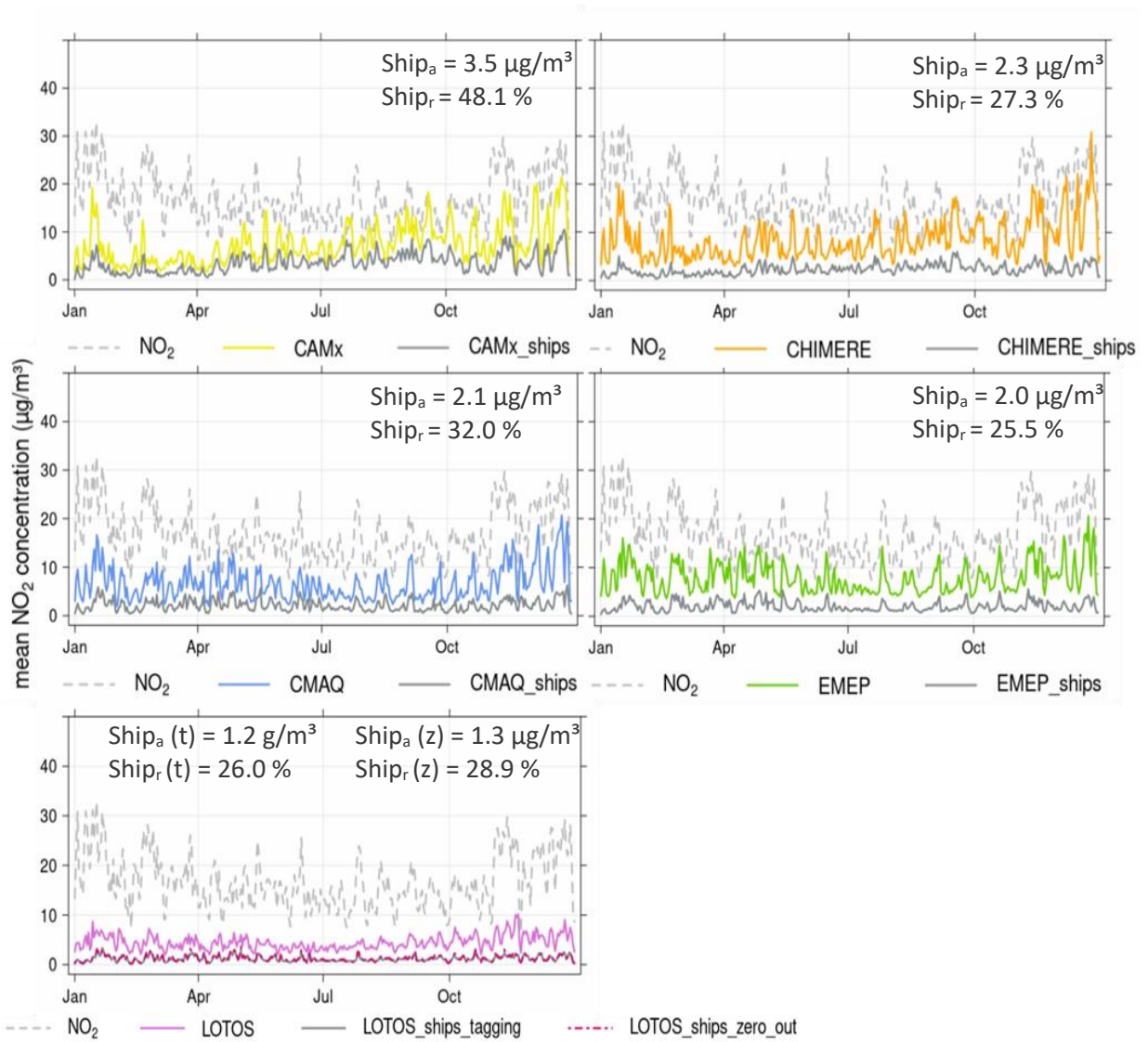
Figure S6: Time series with daily mean values of NO₂ for 2015 in panel "east". (a) = CAMx, (b) = CHIMERE, (c) = CMAQ, (d) = EMEP, (e) = LOTOS-EUROS. Dashed grey line = measured data, colored lines = modelled data, grey line = modelled ship contribution. Correlation between modelled and measured data for hourly total emission data for 2015: CAMx: R = 0.16, CHIMERE: R = 0.22, CMAQ: R = 0.22, EMEP: R = 0.27, LOTOS-EUROS: R = 0.23.
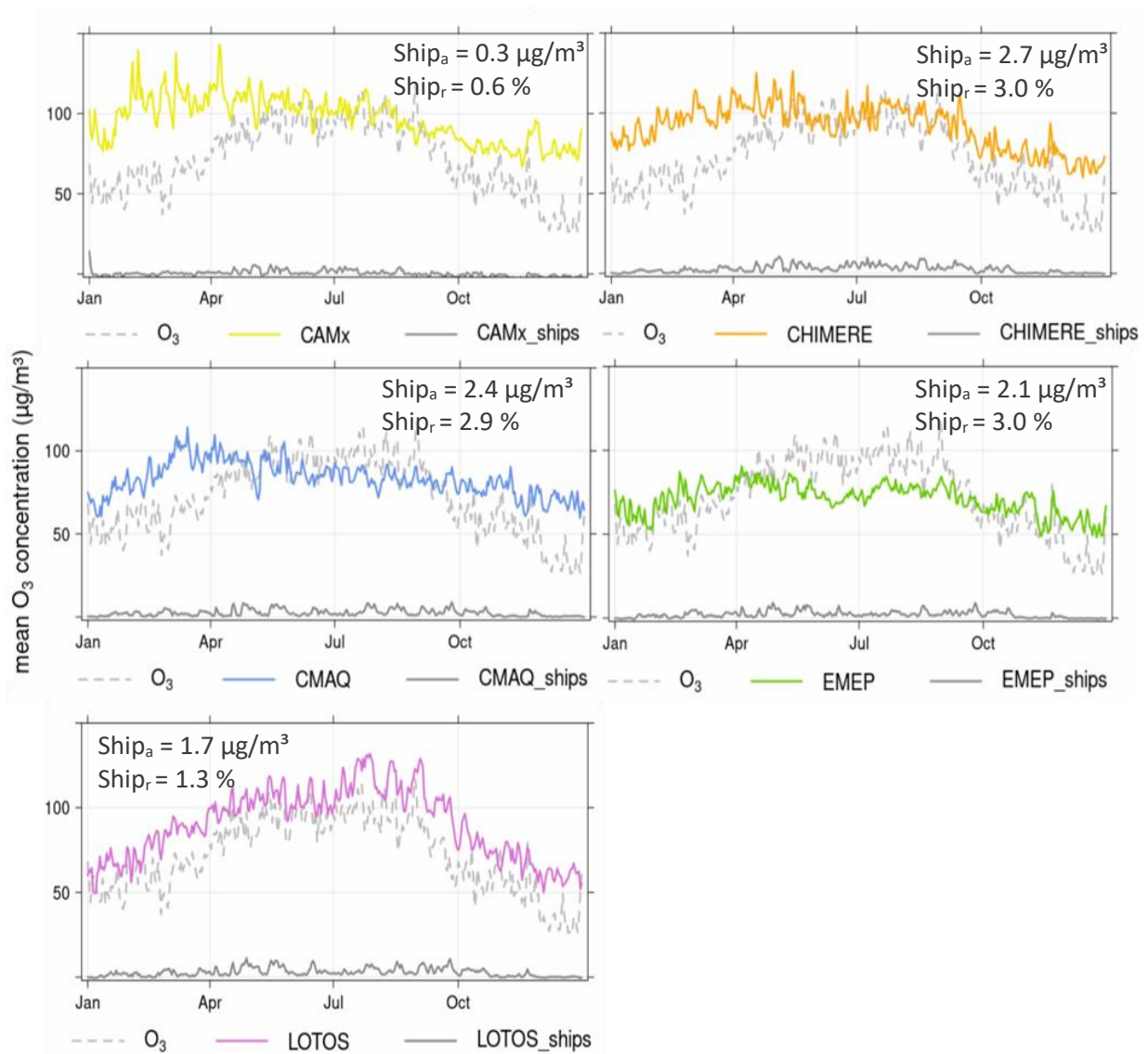
Figure S7: Time series with daily mean values of O₃ for 2015 in panel "east". (a) = CAMx, (b) = CHIMERE, (c) = CMAQ, (d) = EMEP, (e) = LOTOS-EUROS. Dashed grey line = measured data, colored lines = modelled data, grey line = modelled ship contribution. Correlation between modelled and measured data for hourly total emission data for 2015: CAMx: R = 0.35, CHIMERE: R = 0.46, CMAQ: R = 0.37, EMEP: R = 0.47, LOTOS-EUROS: R = 0.53.
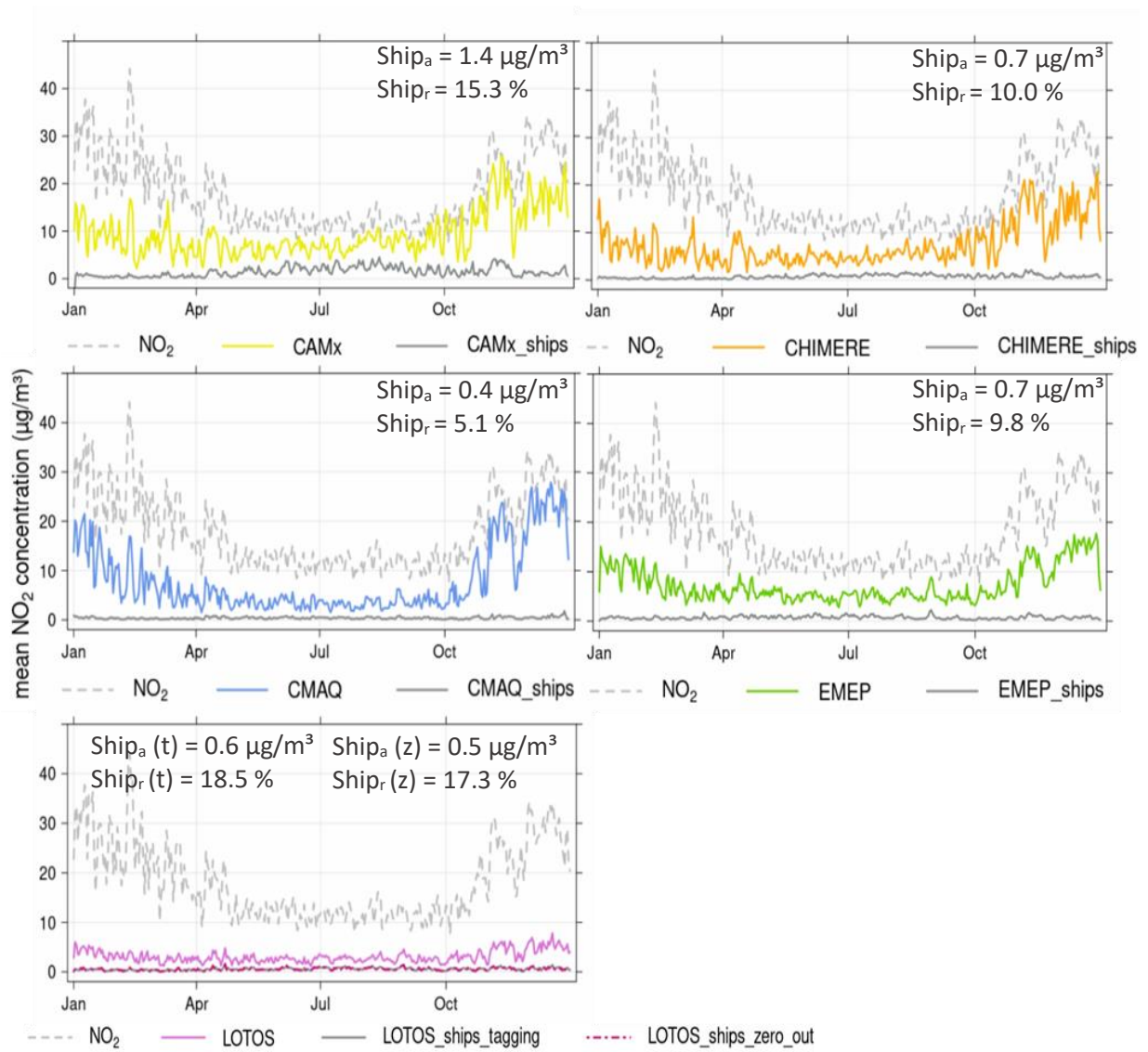
Figure S8: Time series with daily mean values of NO₂ for 2015 in panel "north". (a) = CAMx, (b) = CHIMERE, (c) = CMAQ, (d) = EMEP, (e) = LOTOS-EUROS. Dashed grey line = measured data, colored lines = modelled data, grey line = modelled ship contribution. Correlation between modelled and measured data for hourly total emission data for 2015: CAMx: R = 0.27, CHIMERE: R = 0.27, CMAQ: R = 0.34, EMEP: R = 0.36, LOTOS-EUROS: R = 0.26.
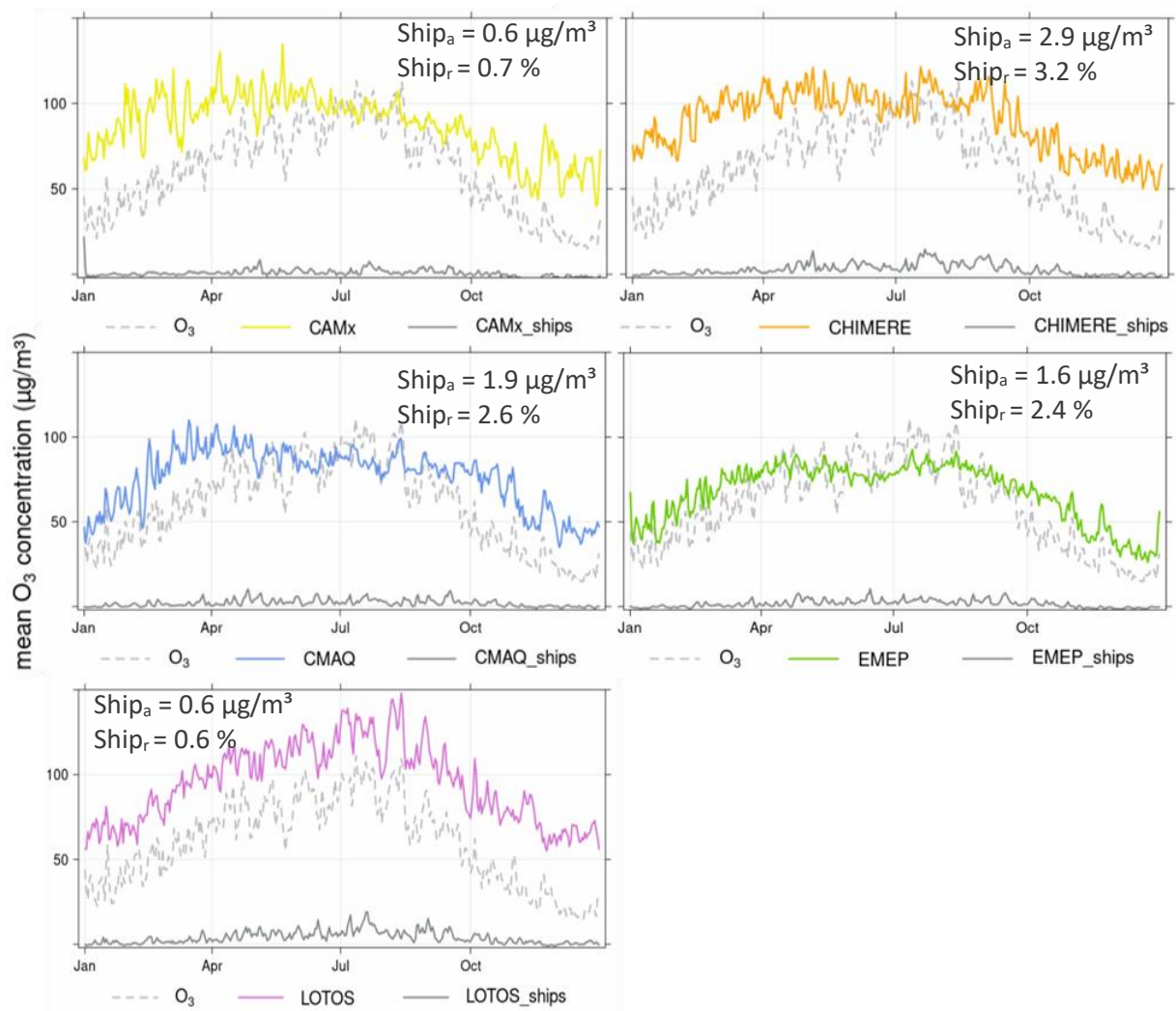
Figure S9: Time series with daily mean values of O₃ for 2015 in panel "north". (a) = CAMx, (b) = CHIMERE, (c) = CMAQ, (d) = EMEP, (e) = LOTOS-EUROS. Dashed grey line = measured data, colored lines = modelled data, grey line = modelled ship contribution. Correlation between modelled and measured data for hourly total emission data for 2015: CAMx: R = 0.62, CHIMERE: R = 0.70, CMAQ: R = 0.64, EMEP: R = 0.70, LOTOS-EUROS: R = 0.66.