Supplemental Materials for Source Sector and Region Contributions to Black Carbon and $PM_{2.5}$ in the Arctic

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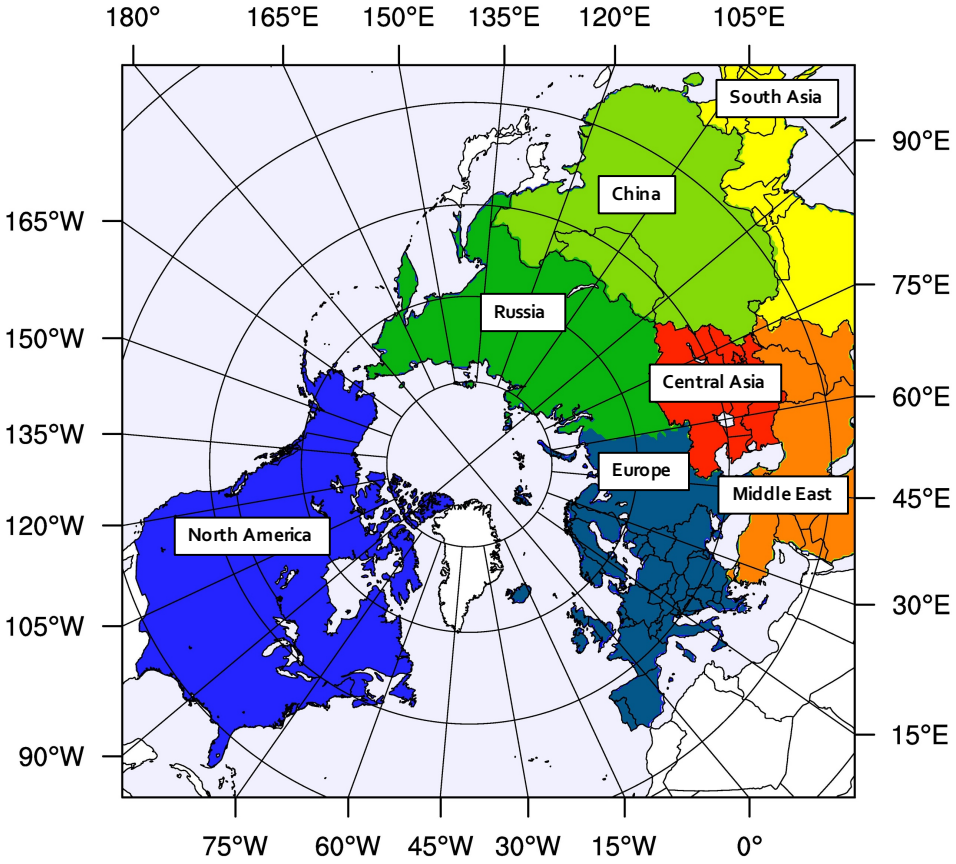

Figure SM 1: WRF-STEM modeling domain setup and source regions defined for this study.

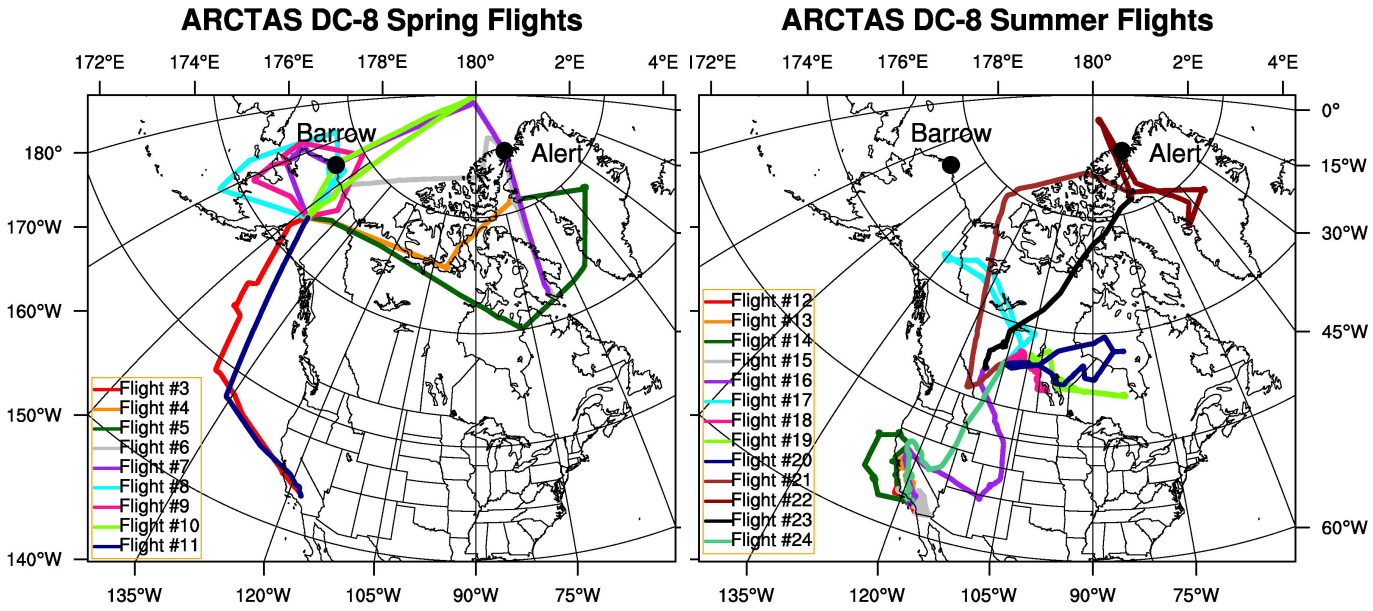

Figure SM 2: NASA ARCTAS DC-8 flight tracks during a) Spring 2008 and b) Summer 2008.

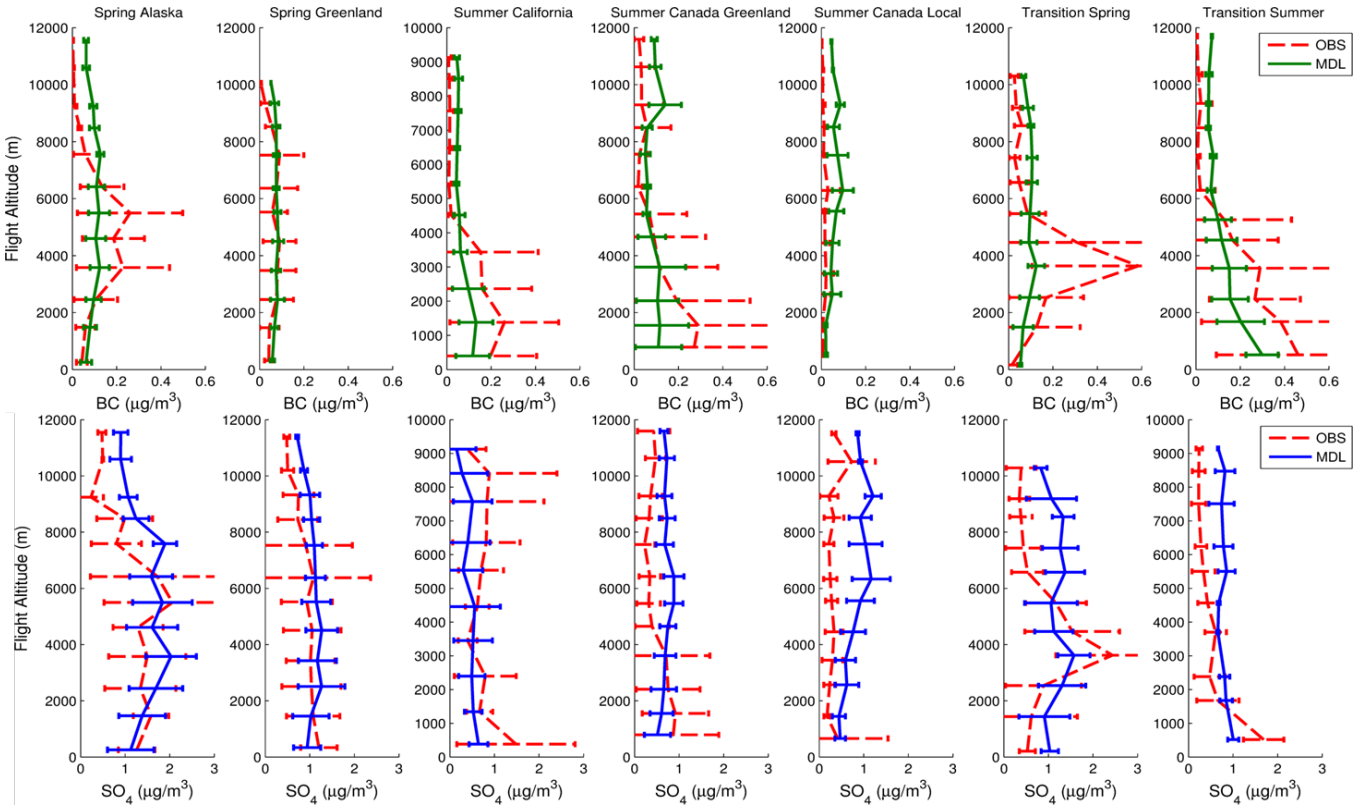

Figure SM 3: Vertical profile and comparison of STEM model aerosols with ARCTAS DC8 aircraft observations.

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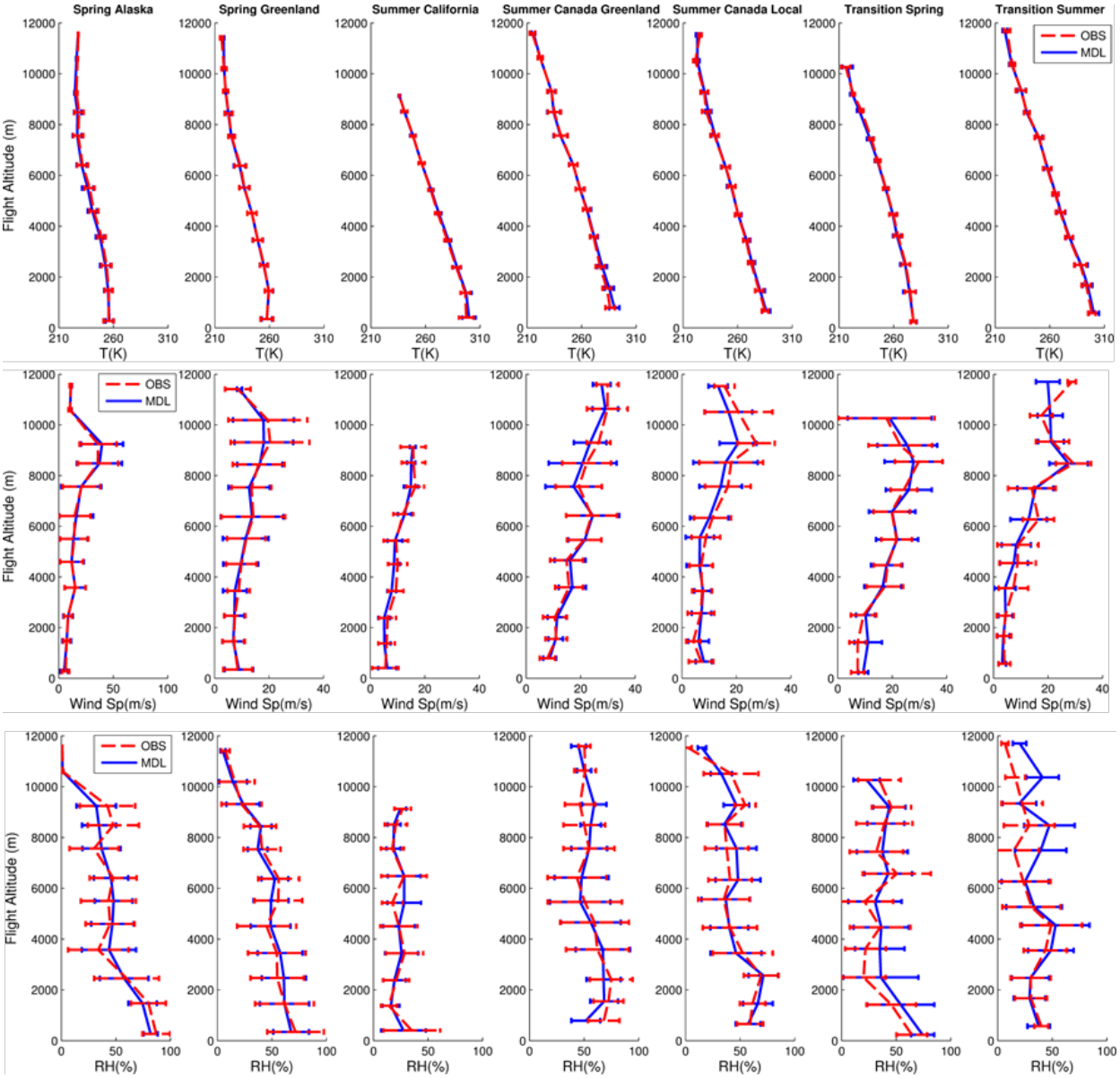

Figure SM 4: Vertical profile and comparison of simulated vs measured metrological variables for ARCTAS flight categories.

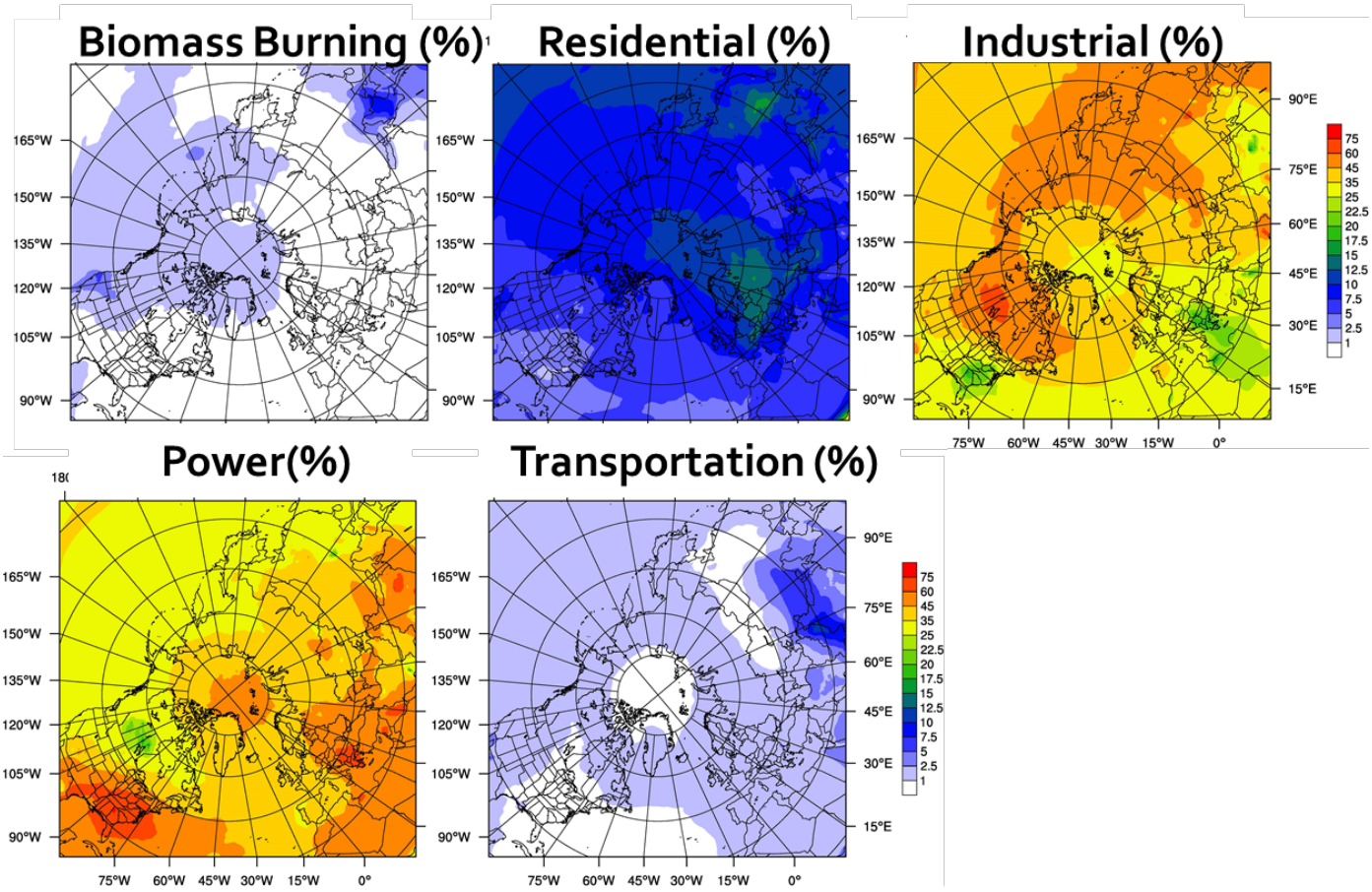

Figure SM 5: Spatial distribution of source sector contributions (%) to annual SO_4 surface concentration

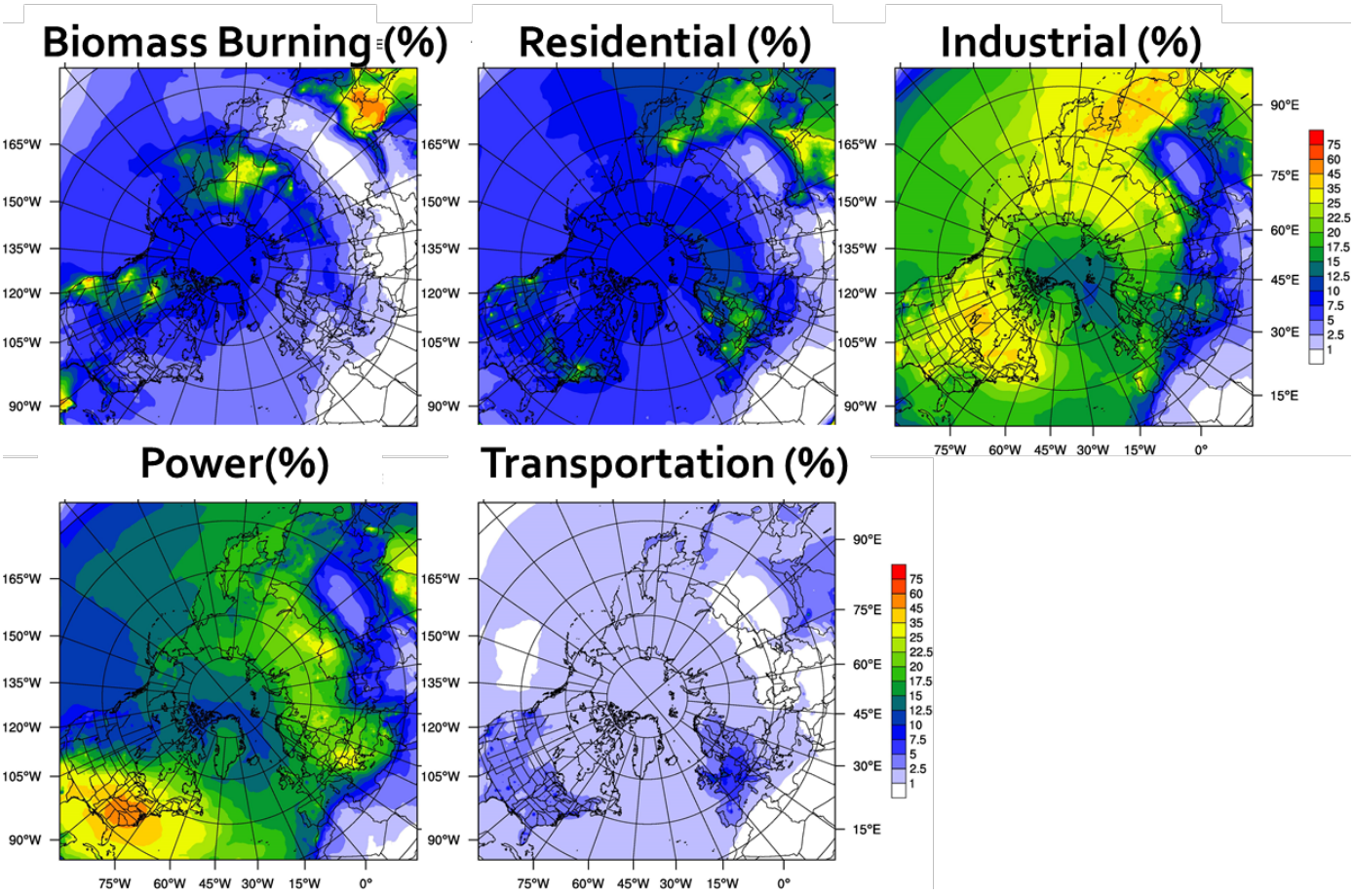

Figure SM 6: Spatial distribution of source sector contributions (%) to annual PM2.5 surface concentration

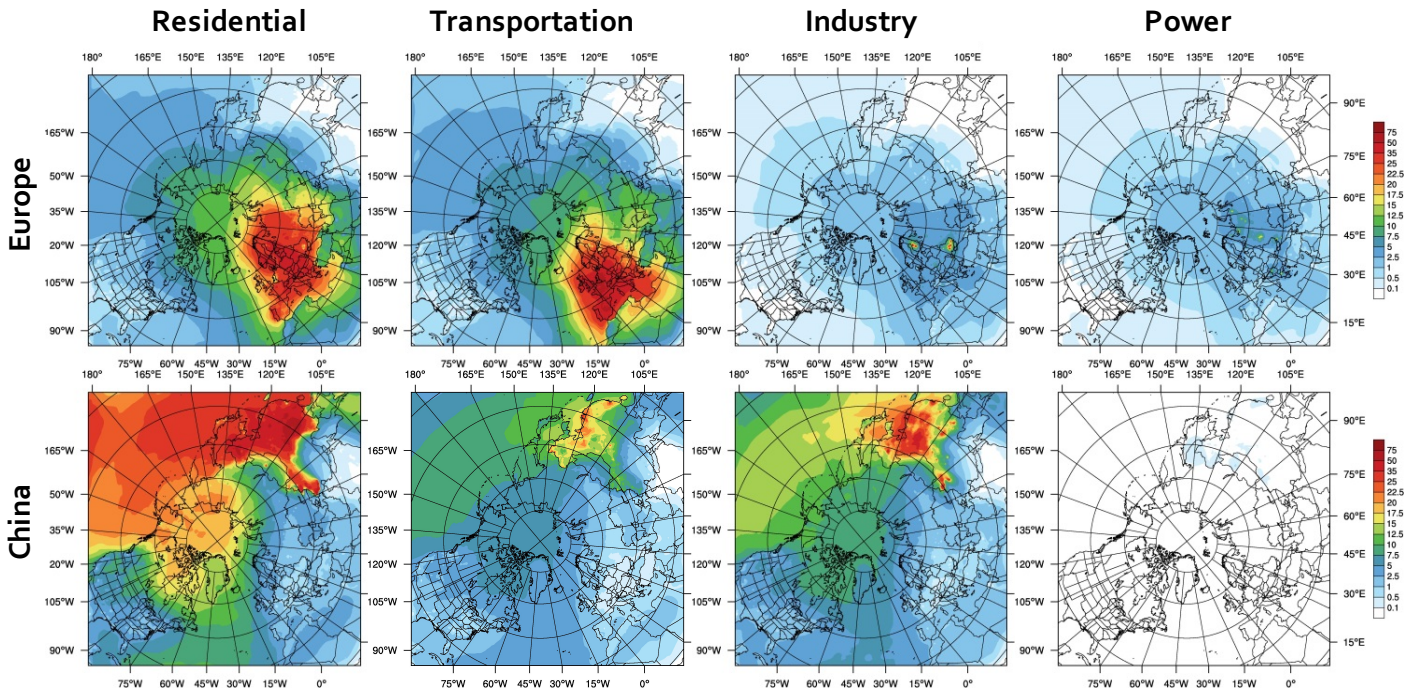

Figure SM 7: % contributions of different sectors from Europe and China to surface BC– annual average

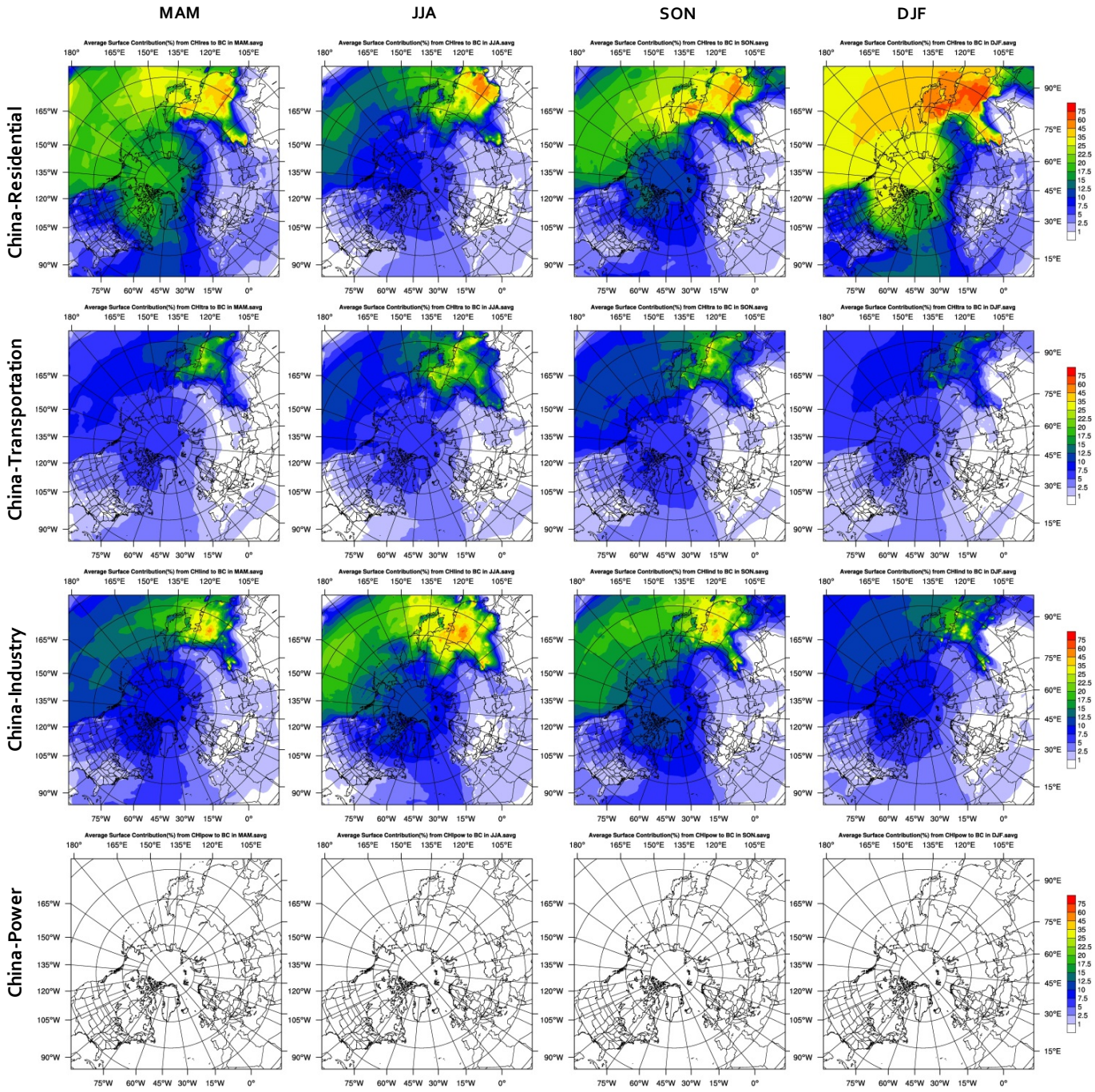

Figure SM 8: Seasonality % contributions of different economic sectors from China to surface BC

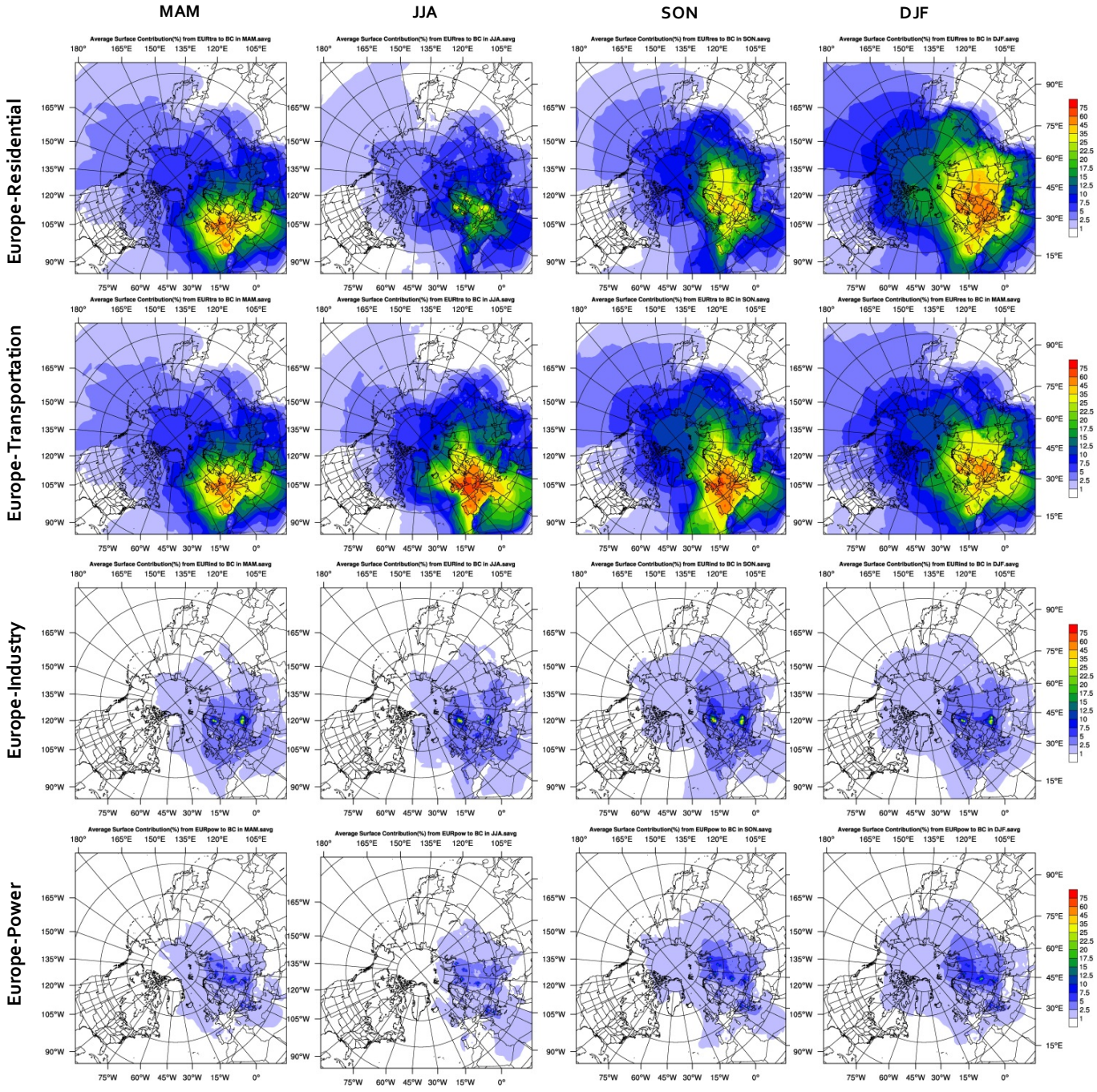

Figure SM 9: Seasonality % contributions of different economic sectors from Europe to surface BC