EVALUATION OF SOURCE-RECEPTOR RELATIONSHIP FOR ATMOSPHERIC POLLUTANTS USING PROBABILITY FIELDS ANALYSIS

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The evaluation and interpretation of the source-receptor relationship for atmospheric pollutants from/to several locations vs. geographical regions of the North Europe and North Pacific regions are discussed. For this purpose, four research tools were applied: trajectory modelling, dispersion modelling, cluster analysis of trajectory modelling results, and probability fields analysis of trajectory and dispersion modelling results. Several approaches are considered in this study. The first approach is based on evaluation of the individual backward/forward trajectories for the specific cases of concern (i.e. elevated/lowest concentrations of pollutants). The second approach is based on evaluation of the clustered trajectories for a multiyear period or groups of the specific cases. The third approach is based on evaluation of the airflow and fast transport probabilistic fields for the source and receptor regions for a multiyear period. The fourth approach is based on evaluation of the probabilistic fields for the concentration and deposition patterns due to atmospheric transport from/to source/receptor regions.