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Validation of a Lagrangian particle dispersion model with wind tunnel and field experiments in urban environment

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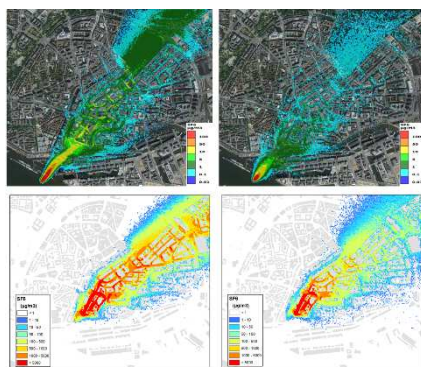
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We present and evaluate a modelling approach that is a compromise between accuracy and timeliness of the computations for simulating unexpected releases in built environments. (P)MSS, a 3D Lagrangian Particle Dispersion model driven by 3D flow and turbulence input, is applied. The modelling system is validated on a panel of experimental test-cases from the Cooperation in Science and Technology (COST) Action ES1006 in both idealized and realistic urban mock-ups, wind tunnel and in-field trials, continuous and puffs releases. Results show that the model is compliant with the validation criteria in the large majority of the test-cases. The modelling system provides reliable results and it is prone to quickly inform about the distribution of possibly noxious materials in built-up populated areas.



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