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Tracer and Timescale Methods for Passive and Reactive Transport in Fluid Flows

Guest Editors:

Prof. Dr. Eric Deleersnijder
Institute of Mechanics, Materials and Civil Engineering (IMMC) & Earth and Life Institute (ELI), Université catholique de Louvain, Louvain-la-Neuve, Belgium

Dr. Inga Monika Koszalka
Department of Meteorology, Stockholm University (MISU), Svante Arrhenius väg 16 C, SE-106 91 Stockholm, Sweden

Dr. Lisa V. Lucas
Integrated Modeling and Prediction Division, Water Mission Area, U.S. Geological Survey, Menlo Park, CA, USA

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Message from the Guest Editors

Dear Colleagues,

Tracer methods (the analysis of the spreading of tracer patches, as well as clouds of particles) and their associated timescale diagnoses (e.g., age or residence/exposure time) are powerful tools that help to assess and understand the passive and complex reactive transport processes taking place in geophysical (Earth and planetary) flows, environmental fluids, engineering applications, and laboratory experiments. The aforementioned diagnoses apply to natural or artificial tracers, be they numerical or derived from measurements. For their integrative properties, tracer and timescale methods are holistic, in that they include all of the available pieces of information about the underlying transport processes taking place in the fluid flows.

This Special Issue aims to present the recent advances in tracer and timescale methods. Numerical methods using Eulerian or Lagrangian approaches will be considered, as well as techniques based on remotely sensed or in situ data. We will seek a balance between contributions from natural sciences and engineering, as well as between numerical, observational, and theoretical approaches.

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Dr. Jean-Luc PROBST
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Message from the Editor-in-Chief

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Contact Us

Water Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
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mdpi.com/journal/water
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𝕏@Water_MDPI