Goldschmidt 2023 Abstract
https://doi.org/10.7185/gold2023.20239

What have we learned in 70 years of Environmental Tracer Applications and where are we going?

MARTIN STUTE

Lamont-Doherty Earth Observatory

Presenting Author: martins@ldeo.columbia.edu

The systematic use of environmental tracers began to explode in the late 1950s and its growth is continuing. Considering the enormous challenges we are facing in terms of water resources, climate change, pollution etc., environmental tracer applications are more important than ever. Novel instruments have broadened the spectrum of tracers available which can now be measured with unprecedented precision and high frequency, not only in the laboratory but often on site. Much has been learned in terms of sources and sinks of these tracers and their behavior in the environment. The interpretation of multi tracer data sets has evolved from very simple piston flow approaches to sophisticated numerical and statistical methods. As a result of the increasing human footprint, more tracer applications are shifting from natural to disturbed systems and the active management of water resources. Their use is also increasingly accepted outside of the scientific community and does influence societal relevant decisions.

This presentation will review the trends in environmental tracer applications and illustrate them with case studies.