CRC ENERGY TRANSITION LECTURE SERIES 2024

Presented by CALIFORNIA STATE UNIVERSITY BAKERSFIELD | California Energy Research Center

Fiber Optic Distributed Sensing as a Window on Subsurface Flow

The advancement of fiber optic distributed sensing over the past two decades has enabled the measurement of subsurface hydraulics and geomechanics at unprecedented temporal and spatial detail. Fiber optic distributed sensing systems operate by firing laser light down a fiber optic cable and using backscattered photons to measure temperature, vibration, or strain. Kilometers of measurements can be made at scales as small as a centimeter and at sampling intervals of less than a millisecond. We will look at how this technology has improved our understanding of subsurface flow related to diverse applications such as stream discharge, managed aquifer recharge, remediation of contaminated sites, aquifer testing, fracture hydromechanics, and energy resources. As these instruments become more reliable, accurate, and economical, opportunities for revolutionary observations of groundwater systems will continue to expand in the coming decades.

Matthew Becker, PhD
CSU Long Beach

ABOUT THE SPEAKER

Matt Becker is the Conrey Chair in Hydrogeology and Professor of Earth Sciences at California State University Long Beach, USA. He holds degrees in Geology and Civil Engineering and has worked with Los Alamos National Labs, the U.S Geological Survey, NASA Goddard Space Flight Center, the University at Buffalo, and has been awarded Fulbright scholarships for Italy and Australia. Matt's primary focus of research is fluid flow in highly heterogeneous subsurface environments.

FEBRUARY 28, 2024 | 4 pm to 5 pm | Room: RNEC 105

Sponsored by CALIFORNIA RESOURCES CORPORATION | CARBON TERRAVAULT