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Title: *The Combination of Real-Time Data, HPC, and Interactive Visualization in the VESTEC project*

Abstract

Traditionally, HPC has been used to simulate disastrous events such as wildfires, spread of diseases, or solar outbursts after the event, typically for post-disaster analysis. However, with the increasing availability of high-velocity sensor data and computational resources, as well as the development of elaborate in-situ data analytics and visualization techniques it is now possible to support urgent decision makers in real-time utilizing HPC infrastructure.

In this talk, we will present the approaches that are employed in the H2020 FETHPC project VESTEC (Visual Exploration and Sampling Toolkit for Extreme Computing) to tackle the challenges that arise when combining real-time data with HPC infrastructure and interactive visualization, both regarding technology and policies. Whilst the challenges are significant, so are the potential benefits of overcoming them, not only to the HPC community but also to society as a whole.