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Responding to reproducibility challenges from physics to social sciences

Monday, 14 October 2019 11:00 (40 minutes)

Facilitating research reproducibility presents a pressing issue across all sciences. However, since different challenges arise in natural and social sciences, domain-specific strategies might be the best way to promote reproducibility. This talk presents experiences from two different disciplines: energy economics and high-energy physics. It discusses and compares potential technical and conceptual solutions for facilitating reproducibility and openness in the two fields. On the energy economics side, the ubiquitous use of proprietary software and sensitive data are encumbering efforts to share research and thus inhibit reproducibility. I present insights around these issues based on interviews with faculty and staff at the Energy Policy Institute at the University of Chicago. On the high-energy physics side, vast amounts of data and complex analysis workflows are among the main barriers to reproducibility. I present domain-tailored solutions to these problems, including projects called CERN Open Data, CERN Analysis Preservation and REANA - Reusable Analysis. Finally, I discuss the types of tools that can be used to facilitate reproducibility and sharing, detailing their ability to address various challenges across different disciplines.

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