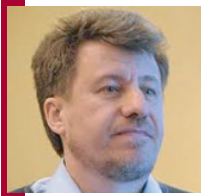


Reconstruction of pioneering physics experiments: Importance and lessons learned



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Abstract:

Reproducibility is a growing issue in modern science - situations with high impact results in, e.g., social sciences, medicine and even biology and chemistry is often described as a crisis. Physics stands out as arguably the most reproducible discipline due to very high and universally applied standards. Reconstruction of pioneering physics experiments of the Enlightenment helps us to understand the development of "repeatable" Nature-philosophy. I will overview several modern-day experimental replications of the early days in physics and astronomy breakthroughs, present in detail the reconstruction of the 1761 discovery of Venus's atmosphere in 2012, and discuss other opportunities for replication of famous experiments.

