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Fully Immersive VR in Teaching and Science Outreach

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While certainly not a replacement for hands-on physics labs, the fully immersive virtual reality (VR) technology creates opportunities for new learning experiences that would otherwise be too expensive or impossible to implement, such as observing high-energy particle scattering or touring the Solar System. A standard VR system is also relatively easy to transport and set up, making it an excellent tool in science promotion, especially for programs engaging small groups of pre-selected students, such as girls, rural students, or Indigenous youth. We demonstrate that at the modern VR systems such as HTC VIVE or Oculus Rift are now affordable to most university physics programs and can be set up and run by physics majors with some minimal training in courses such as Astrophysics and Subatomic Physics. The fully immersive VR technology also provides excellent training opportunities for students interested in developing their own physics simulations.

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