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The Distributed Electronic Cosmic-ray Observatory

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Camera image sensors in cell phones can be used as detectors not only of optical photons but also of high energy particles. The Distributed Electronic Cosmic-ray Observatory (DECO) is a citizen science project launched in 2014 to detect cosmic rays and other ionizing radiation using smart phones. It consists of a free app and associated public web-based data browser. Users in over 80 countries and all seven continents contribute to the data set. In addition to cosmic-ray muons, the data set includes particle events due to electrons and gamma rays from terrestrial radioactivity. We use computer vision for automatic particle identification. I will summarize the app and data set as well as the measurements we have made with DECO.

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