The 2019 Young Experimental Physicist Prize of the High Energy and Particle Physics Division of the EPS for outstanding work of early-career physicists in the field of particle physics and/or particle astrophysics is awarded to Josh Bendavid “for outstanding and innovative contributions to detector operations, software development, data analysis and detector upgrades of the CMS experiment” and Lesya Shchutska “for outstanding contributions to experimental activities in particle physics, from the design and simulation of novel experiments, test-beam operations and analyses, to data analyses and their final theoretical interpretations”.

Josh Bendavid (CERN) is a young physicist with a broad research portfolio, who has made important and innovative contributions to the CMS experiment. He has been a driving force in several high profile analyses. He spearheaded the use of machine learning techniques and developed sophisticated statistical tools and methods that earned him a leading role in the discovery of the Higgs boson in the diphoton decay channel [1], which occurred earlier than the original expectation based on the use of more traditional analysis approaches. Josh was also instrumental in the combination of results from CMS and LHCb on the rare decay of the strange B meson to two muons, \( B_s \to \mu\mu \) [2]. The combined analysis is regarded as the first true observation of this decay, which places very strict constraints on theories extending the Standard Model of particle physics. Josh was entrusted at a very early stage of his career with major convenorship positions, in particular the one heading the Standard Model analysis group. He was also the coordinator of the Tier-0 grid computing facility and has been contributing to the development of new detectors for the high-luminosity phase of the LHC.

Lesya Shchutska (EPFL Lausanne) has made significant contributions to a large and varied spectrum of particle physics and particle astrophysics experiments. Among these are searches for physics beyond the Standard Model at the LHC with CMS and B-physics analyses with LHCb, detector development for CMS and balloon-based experiments studying cosmic rays, as well as feasibility studies for the proposed beam-dump experiment SHiP at CERN for the detection of hidden particles that are expected to interact only very weakly with known Standard Model particles. Lesya has several outstanding research achievements to her credit. These include publications that were elaborated under her leadership as convenor of the Supersymmetry analysis group of the CMS experiment, and her own proposals for promising searches for new physics phenomena. The latter include a search for new heavy neutral leptons [3], in particular massive Majorana neutrinos.


[2] Observation of the rare \( B_s^0 \rightarrow \mu^+\mu^- \) decay from the combined analysis of CMS and LHCb data, CMS Collaboration and LHCb Collaboration, Nature 522, 64 (2015).