Canadian Association of Physicists
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POS-44 Three new roads to the Planck scale

Tuesday 12 June 2018 18:00 (2 minutes)

We propose three new heuristic derivations of the Planck scale which are based on basic principles or phenomena of relativistic gravity and quantum physics. The Planck scale quantities obtained are within one order of magnitude of the "standard"ones. The phenomena contemplated are the pair creation of causal bubbles so small that they can be treated as particles, the scattering of a matter wave off the background curvature of spacetime that it induces, and the Hawking evaporation of a black hole in a single burst at the Planck scale.

[Based on V. Faraoni, Am. J. Phys., 85, 865 (2017)]

Author: Prof. VALERIO, Faraoni (Bishop's University)

Presenter: Prof. VALERIO, Faraoni (Bishop's University)

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