

# Exclusive production of excited light vector mesons with a holographic wave function model

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The exclusive photo- and electroproduction of the light vector mesons  $\rho$ ,  $\omega$  and  $\phi$  are studied within the color dipole picture as function of the center-of-mass energy of the  $\gamma p$  collision and the momentum transfer squared  $|t|$ . The corresponding vector meson wave functions have been computed with the relativistic AdS/QCD holographic approach. This enabled us to obtain a good description of all available data for the ground-state light mesons  $\rho(1S)$ ,  $\omega(1S)$ , and  $\phi(1S)$  as well as to make predictions for the excited states  $\rho(2S)$ ,  $\omega(2S)$ , and  $\phi(2S)$  with the same formalism. This study revealed the existence of a sizeable theoretical uncertainty coming from modeling the partial dipole amplitude in the non-perturbative kinematical domain. These uncertainties could be deeply investigated with measurements of the light vector meson cross sections in future hadron colliders.

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