

# **Influence of the photoelectric effect occurring at the PMT first dynode on the RED-100 detector performance**

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The RED-100 two-phase xenon emission detector utilizes Hamamatsu R11410-20 PMTs to detect VUV luminescent photons. It was observed, that the background PMT illumination with the luminescent light from cosmogenic muons leads to signal generation at the PMT anode even when the photocathodes are blocked with the help of a dedicated controllable PMT base. We attribute this fact to the photoelectric effect occurring at the PMT first dynode. Results of quantitative measurements of its influence on the RED-100 photodetection system performance are presented here, including the estimation of the first dynode's quantum efficiency, which is measured to be  $\geq 9\%$ .

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