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Soft photon study at NICA's facilities

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Over 30 years there has been no comprehensive understanding of the mechanism of soft photons formation (energy smaller 50 MeV). Experimental data indicate an excess of their yield in hadron and nuclear interactions in comparison with calculations performed in QED. In JINR, in connection with the building of a new accelerator complex NICA, it has become possible to carry out such studies in pp, pA and AA interactions at energies up to 25 A GeV. Our group develops the conception of an electromagnetic calorimeter on type “shashlyk” based on gadolinium gallium garnet (GaGG) crystals, which have significantly lower the threshold for registration of photons. The first tests of electromagnetic calorimeters manufactured at JINR on the basis of the GaGG and a mixture of tungstate and copper are reported.

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