

# High-energy gamma-ray studying with GAMMA-400 after Fermi-LAT

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Fermi-LAT has made a significant contribution to the study of high-energy gamma-ray diffuse emission and the observation of ~3000 discrete sources. However, one third of all gamma-ray sources (both galactic and extragalactic) are unidentified, the data on the diffuse gamma-ray emission should be clarified, and signatures of dark matter particles in the high-energy gamma-ray range are not observed up to now. GAMMA-400, currently developing gamma-ray telescope, will have the angular ( $\sim 0.01^\circ$  at 100 GeV) and energy ( $\sim 1\%$  at 100 GeV) resolutions in the energy range of 10-1000 GeV better than the Fermi-LAT (as well as ground gamma-ray telescopes) by a factor of 5-10 and observe some parts of the universe (such as Galactic Center, Fermi Bubbles, Crab, Cygnus, etc.) in the highly elliptic orbit (without shading the telescope by the Earth) continuously for a long time. It will permit to resolve gamma rays from dark matter particles, identify many discrete sources (many of which are variable), to clarify the structure of extended sources, to specify the data on the diffuse emission.

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