## **International Conference on the Physics of the Two Infinities**



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## GRAINE project: Cosmic gamma-ray observation by balloon-borne emulsion telescope

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GRAINE (Gamma-Ray Astro-Imager with Nuclear Emulsion) is GeV/sub-GeV cosmic gamma-ray observation project with balloon-borne nuclear emulsion telescope. It can determine incident gamma ray angle via pair creation, with small material thickness (.002 radiation length par film). Angular resolution can reach close to the kinematical limit, which is  $0.1^{\circ}$  for 1 GeV gamma-ray ( $1.0^{\circ}$  for 100 MeV), and polarization information can also be provided. By repeating balloon flights with emulsion telescopes having large aperture area ( $10m^2$ ) and wide viewing angle (zenith to  $45^{\circ}$ ), GRAINE will provide qualitatively new data with finer resolution and polarization information in the field of gamma ray astronomy in GeV/sub-GeV band. The current status and future prospects are introduced.

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