

**Project Title:** Airborne Geophysical Surveys over the East Antarctica Highland

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**Abstract:**

During last 25 years, a large portion of Antarctic continent was covered by airborne geophysical surveys which contributed significantly to understanding the tectonic history and modern crustal geodynamics of the Antarctic interior by providing the data on bedrock topography and potential fields; these data are also critical for modeling the initial Cenozoic glaciation and growth of the EAIS.

Nevertheless, a large region between 75° E and 110° E is still poorly characterized by only a few oversnow traverses conducted during early Australian and Russian campaigns. The scarce information obtained from these traverses suggests that this region represents a spacious highland bordered by the Lambert-Amery intracontinental rift system on the west and Aurora Subglacial Basin on the east. The highland includes a unique bedrock depression of Lake Vostok and is probably continuous with the Gamburtsev Subglacial Mountains whose tectonic setting is still unknown.

The proposed survey will result in acquisition of airborne ice-penetrating radar, magnetic and gravity data over the large portion of this enigmatic highland that will enable new insight in its bedrock topography, sub-ice environments and crustal structure. Line spacing is expected not to exceed 20 km using a long-range aircraft based at Russian Progress Station.

The project can be linked with “GigaGAP”, “IDEA” and “IPY Airborne Geophysical Survey” initial proposals included in the ICSU IPY PG initial summary of ideas. The same logistic facilities can also be used to accomplish the airborne survey component of recently submitted proposal “Geodynamic, depositional and environmental history of the region off the Amery Ice Shelf”.

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