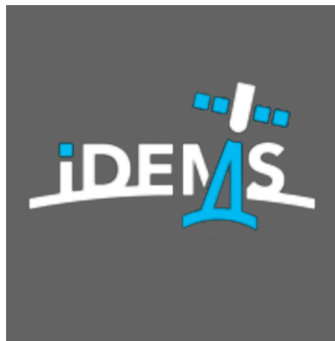


International Digital Elevation Model Service (IDEMS)

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Director: Kevin M. Kelly (USA)

IDEMS website - <https://idems.maps.arcgis.com/home/>



1 Introduction

The International Digital Elevation Model Service (IDEMS) is one of the five Services of the International Gravity Field Service (IGFS) of the IAG. IDEMS provides a focus for distribution of data and information about digital elevation models (DEM), spherical-harmonic models of Earth's global topography, lunar and planetary DEM, relevant software and related data sets (including representation of Inland Water within Digital Elevation Models), which are available in the public domain. IDEMS is hosted and operated by the Environmental Systems Research Institute (Esri) (see <http://www.esri.com/>).

2 Products

Over the last 4 years, the IDEMS website (Fig. 1) has been continually updated with new DEM data sets, both terrestrial and planetary. IDEMS currently hosts 31 sources of terrestrial and planetary DEM data providers, 5 global Earth models and 126 references of DEM and bathymetry research papers relevant to geodesy and Earth sciences. Fig. 2 lists the current content available on the IDEMS website.

The IDEMS bibliography is updated regularly (currently two times per year) to provide the user community with an overview over key developments in DEM pro-

duction, validation and applications. The IDEMS bibliography includes recent and seminal papers describing relevant data sets of Earth's topography, bathymetry, ice data and composite elevation models. Some DEM sources appear in multiple categories to facilitate source discovery for the researcher. IDEMS serves as a repository of links to DEM data providers rather than a DEM data storage facility. The site also provides access to Esri's free ArcGIS Earth software which is fully integrated with the ArcGIS platform for accessing, sharing, and publishing maps and data (see <https://www.esri.com/en-us/arcgis/products/arcgis-earth/overview>).



Fig. 1. Screenshot of IDEMS home page

Bathymetry and Ice Data (13)	Antarctica CryoSat-2 DEM
	Bedmap2
	BOEM Northern Gulf of Mexico Bathymetry
	Elevation Coverage Map (Esri)
	Flight MH370 Bathymetry
	Global Bathymetry BTM (Esri)
	Global Water Body Map (G3WBM)
	Ice, Cloud, and Land Elevation (ICESat / GLAS Data)
	Polar Geospatial Center
	Randolph Glacier Inventory (RGI 6.0)
	SRTM15+V2.0 (15 arc-sec grid), 2019
	SRTM30_PLUS (30 arc-sec grid), 2014
	Svalbard time-lapse terrain data
Global DEMs (16)	ALOS/PRISM AW3D30
	ASTER GDEM v2
	EarthDEM (Polar Geospatial Center)
	Elevation Coverage Map (Esri)
	Esri Elevation Layers
	ETOPO1 (60 arc-sec grid), 2009
	Global Terrain DEM (Esri)
	Global Water Body Map (G3WBM)
	MERIT DEM (SRTM-based Bare-Earth model), 2017
	NASADEM (reprocessed SRTM model), 2017
	SRTM v3 (NASA)
	SRTM v4.1 (CGIAR-CSI)
	SRTM15+V2.0 (15 arc-sec grid), 2019
	SRTM30_PLUS (30 arc-sec grid), 2014
	TanDEM-X DEM
	Viewfinder Panorama DEMs (2014)
Regional DEMs (7)	Antarctica CryoSat-2 DEM
	Arctic DEM Explorer
	OpenTopography
	Elevation Coverage Map (Esri)
	Esri Elevation Layers
	Polar Geospatial Center
	Svalbard Time-Lapse Terrain Model
Planetary Terrain Data (3)	NASA Planetary Data System (PDS) Geosciences Node
	Planetary topography data archive
	USGS Astrogeology Science Center
Earth Models (5)	Earth2014 (60 arc-sec), 2014
	ICE-6G GIA Model
	Preliminary Reference Earth Model (PREM)
	Topographic Earth Models (LMU Munich)
	SRTM2gravity, 2018

Fig. 2. DEM and related data sources hosted on IDEMS

3 Program/Activities (2023-2027)

The routine activities at IDEMS focus on adding new DEM, bathymetry and relevant earth or planetary models to the service website. These datasets support global gravity field and regional geoid modeling. Research activities involving IDEMS over the 2023-2027 term include methods of combining high-resolution topographic and bathymetric models in geodesy.

4 Structure

The Governing Board of IDEMS consists of five members who oversee the operation and general activities of the Service:

- Mr. Kevin M. Kelly; Director of IDEMS
- Dr. Fei Wang; Deputy Director of IDEMS
- Dr. Riccardo Barzhagi; IAG/IGFS representative
- Dr. Christian Hirt; Advisory member
- Dr. Michael Kuhn; Advisory member

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