NASA’s Applied Remote Sensing Training Program


2018 Annual Report

Arabian Sea, Nov 2018, Aqua MODIS
What is ARSET?
NASA’s Applied Remote Sensing Training Program

ARSET empowers the global community through online and in-person remote sensing trainings.

These trainings help professionals incorporate Earth observations into their work.

ARSET trainings focus on applied users of data, including: policy makers, environmental managers, and other professionals in the private and public sectors.
NASA’s Applied Remote Sensing Training Program

Trainings are available online or in-person

Online Trainings:
• 2-5 hours long, held over 2-5 sessions
• Available at all levels
• Live or recorded
• Materials available in English and Spanish

In-Person Trainings
• Hosted by a partner
• 2-7 days long, 16-50 hours long
• Use locally relevant case studies
ARSET trainings are built to meet participants’ needs regardless of their background in remote sensing.

Trainings are offered at three levels:

Fundamentals: Assumes no prior knowledge of remote sensing
  • What is a satellite?

Introductory: Requires a fundamentals-level understanding and covers specific applications
  • What can I do with satellite data?

Advanced: Requires an introductory-level understanding and covers in-depth and highly focused topics
  • How do I use satellite data to make a flood map?
In 2018 ARSET provided 17 trainings with 6,362 instances of participation

Average Webinar Attendance: 616

10 webinar series

6 in-person trainings

1 self-guided online training

New training format
Training Topics Included…

- Hydrological Modeling
- Monitoring Tropical Storms
- Wildfires
- Urban Flooding
- Synthetic Aperture Radar
- Geostationary Observations for Air Quality
- Processing Satellite Imagery for Water Quality
- Change Detection

webinar series

self-guided online training

- Fundamentals of Remote Sensing

in-person trainings

- Ecoforecasting
- Air Quality
- Detecting Dust, Fires, and Smoke
- UN Sustainable Development Goals
- Flood Monitoring
In 2018, ARSET Covered Data from More Than 80% of NASA’s Earth Observing Fleet
Reaching More Organizations Than Ever Before
Who Takes ARSET Trainings?

In 2018, participants came from 2,570 organizations and 150 countries.
Targeted Outreach Leads to Increase in Local Government Organizations

1,505 of the 2,570 organizations were new to ARSET
103 organizations in 2018 were local governments
⇧ This is a 30% increase from 2017
Of the 103 local government organizations, 87 were new to ARSET
Increased Latin American Participation
Latin America & the Caribbean Represented 1/3 of Global ARSET Participants in 2018

In 2018, participants came from every Latin American country.

336 out of 847 organizations represented were from local-, state-, and federal-level governments.

This represents a 60% growth in governmental organizations compared to 2017.
In 2018, ARSET Offered 2 Bilingual Trainings

Advanced Webinar: Radar Remote Sensing for Land, Water, & Disaster Applications was ARSET’s largest webinar series to date with 1,039 participants. 72% attended the Spanish-only session.
Ejercicio 1: La Evaluación de la Precisión

Objetivos

- Realizar una evaluación de la precisión de una imagen clasificada producida por Landsat
- Construct una matriz de error

Resumen de Temáticas

- Repaso de estrategias de muestreo y puntos de referencia
- Cómo agregar puntos de referencia a un mapa y extraer valores
- Cómo crear una matriz de error y evaluar el nivel de precisión en la clasificación

Herramientas Necesarias

- Esri ArcGIS 10.x
- Microsoft Excel

Datos Asociados

Por favor asegúrese haber descargado los datos necesarios y guárdelos en su computadora antes de hacer este ejercicio. Se puede encontrar los datos en la página en línea de ARSET aquí: https://arset.gsfc.nasa.gov/land/webinars/18adv-land-classification. Los datos necesarios:

- Imagen de Landsat 8 recortada y clasificada (guardada como Landsat_Classified.tif)
  - Esta imagen es del norte de California el 6 de abril de 2016. El nombre del archivo Landsat original es LC08_L1TP_028027_20160406_20160406_L2TF. Esta es una región rural, boscosa y fue clasificada usando seis distintos tipos de cubierta terrestre.
- El archivo Reference_Points.shp
Advanced SAR Training Attendee Talks About the Advantages of ARSET Training

Facundo Casasola, from the National Geographical Institute of the Ministry of Defense of the Argentine Republic, and three other people on his team took the 2018 Advanced SAR training. Participation in the ARSET training increased their capacity to use radar data, which helps with cloud cover and revisit times.

“[ARSET Trainings are] quite good. It’s great that we have the chance to be directly in touch with the instructor, especially when the training is over and they start answering questions from the students as I remember.”
Growth on Social Media
ARSET Twitter Account Grew to 5,950 Followers
Most Popular Tweets of the Year

1. "Happy Valentine's Day, from the ARSET Team! remotesensing"
   - 9:38 AM - 14 Feb 2018
   - 61 Retweets 152 Likes

2. "See our new Fundamentals of Remote Sensing On-Demand Session 1 training to learn the basics of satellite remote sensing, including satellite orbits, types, resolutions, sensors, and their applications to environmental monitoring and management go.nasa.gov/1XnXRfR"
   - 3:36 PM - 14 Dec 2018
   - 28 Retweets 41 Likes

3. "ARSET’s advanced #webinar series: Processing #Satellite Imagery for Monitoring #Water Quality. Sessions held in English and Spanish on Wednesdays from Sept. 5-19. Info and registration here: go.nasa.gov/2AafM6f"
   - 1:05 PM - 22 Aug 2018
   - 19 Retweets 30 Likes
In August, ARSET Began Posting Recorded Webinars to the NASA Video YouTube Channel

From August to December, ARSET’s videos received 22,130+ views
Acknowledgements and the ARSET Team

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Disasters & Water Resources
Sean McCartney, Instructor (GSFC)
Amita Mehta, Instructor (GSFC)
Sherry Palacios, Instructor (ARC)
Erika Podest, Instructor (JPL)

Land & Wildfires
Cynthia Schmidt, Lead (ARC)
Amber Jean McCullum, Instructor (ARC)

Health & Air Quality
Pawan Gupta, Lead (GSFC)
Melanie Follette-Cook, Instructor (GSFC)
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