BIOGRAPHICAL INFORMATION: INDRANI DAS

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Born: West Bengal, India, January 10, 1975
Business Address: Lamont-Doherty Earth Observatory
Columbia University
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Education

2007	• Ph.D, Atmospheric Sciences, Indian Space Research Organization
1999	• M.Sc, Physics (specialization: Particle Physics), Guwahati University
1997	• B.Sc, Physics (Honors), Cotton College, Guwahati University

Post-Doctoral Appointments

2010-2013	• Polar Geophysics Group, Lamont-Doherty Earth Observatory, Columbia University
2007-2009	• Glaciology Group, Geophysical Institute, University of Alaska Fairbanks

Employment

2016-	• Lamont Assistant Research Professor, Lamont-Doherty Earth Observatory, Columbia University
2013-2016	• Associate Research Scientist, Lamont Doherty Earth Observatory, Columbia University
2005-2007	• Scientist C, Defence Research Development Organization, India

Council, Committees and Panels

2019-2023	• Council member of International Glaciological Society
2018-2022	• West Antarctic Ice Sheet Conference Organizing Committee
2018-2020	• Member of the Lamont Postdoctoral Search Committee
2016	• Member of NASA Surface Mass Balance working group

Referee for Nature, Journal of Glaciology, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, The Cryosphere, International Journal of Remote Sensing, Journal of Geophysical Research, GRL, NSF and NERC proposal reviewer, NASA panellist

Invited colloquia and seminars:

September 3, 2019	• Penn State University, Geosciences Colloquium speaker: Internal Structure, Ice Dynamics and Basal Melt of Ross Ice Shelf, Antarctica
October 13, 2016	• University at Buffalo, Geology Department seminar: Ice-Atmosphere Interaction: Implications for Mass Balance of Ice sheets and Mountain Glaciers
May 27, 2016	• Lamont Doherty Earth Observatory, Ocean Climate Physics seminar: Ice-atmosphere interaction: Implications for mass balance of ice sheets and mountain glaciers
May 17, 2016	• Montclair State University, Department of Geosciences seminar: Melting or blowing: Atmospheric impact on the mass balance of ice sheets and glaciers
May 4, 2016	• Rutgers University, Climate Institute: Ice-atmosphere interaction: Implications for mass balance of ice sheets and mountain glaciers
2015	• Lamont Doherty Earth Observatory, MGG/SGT seminar: Extreme ice-atmosphere interaction in East Antarctica: Implications for mass balance and accumulation rates from ice cores
July 9, 2014	• New York University GSTEM program seminar: Glaciers and their response to climate change

Classroom lectures and classes co-taught

Spring 2017	• Co-Instructor, Columbia University, Glacial Processes seminar class: EESCGR9815_001_2017_1
October 12, 2016	• Guest Lecturer, Geology Department, University of Buffalo, Surface mass balance of Antarctica
2007	• Guest Lecturer, U.N. sponsored CSSTE AP course on Aerosols and radiative transfer models, M.Tech Satellite Meteorology, Indian Space Research Organisation, India
2003-2005	• Lab Instructor, U.N. sponsored CSSTE AP course on Aerosols and radiative transfer models, M.Tech Satellite Meteorology, Indian Space Research Organisation, India

Field work

2015 (Oct-Dec)	• Antarctic airborne field work with ROSETTA-Ice
2011 (Oct-Nov)	• Antarctic field work with NASA IceBridge team
2011 (Mar-Apr)	• Greenland field work with NASA IceBridge team
2007	• Alaskan Glacier Airborne laser altimetry data collection
2000, 2001, 2003	• Ship based sunphotometer data collection for aerosol detection over Arabian Sea and Bay of Bengal

Professional services

2018	• Host: West Antarctic Ice Sheet Meeting, Lamont-Doherty Earth Observatory, Columbia University
2018	• Co-organizer and session chair: Antarctic Surface Hydrology workshop, February, Lamont Doherty Earth Observatory
2019, 2018, 2016, 2015	• Chair and Convenor: AGU session on Surface Mass Balance over Greenland and Antarctica
January, 2015	• Invited participant: NASA Goddard pre-PARCA (Program for Arctic Resources Climate Assessment) workshop on Greenland surface melt
2014 (Dec 4-5)	• Invited participant and session chair: Polar HDPC workshop at Rutgers University

Awards:

2011	• NASA Group Achievement award to NASA IceBridge field team
1999-2005	• Ph.D Research Fellowship, Indian Space Research Organization
1992-1997	• Indian National Merit Scholarship

Undergraduate student supervised:

1. Sara Lytle, Columbia University (2017-2018)
2. Mathew Lawhon, Computer Science, Columbia University (2018-2019)

Education Outreach participant (2019-2014)

2011-2016	• World Science Day
2010-2018	• Lamont Open House participant

2019 • Speaker, Climate Strike, Nyack, NY

2019 • Organizing committee, Lamont Diversity Coffee Hour

Memberships

1. Member of American Geophysical Union (AGU)
2. International Glaciological Society (IGS)
3. Life Member of Indian Society of Remote Sensing (ISRS)
4. Annual Member of Indian Meteorological Society, Ahmedabad Chapter (IMSA)

Publications in prep

1. Das, I., MacGregor, J., Schlegel, N., Case, E., Larour, E., and Alexander, P. Holocene history of Greenland Ice Sheet using airborne radar and ice sheet modelling. (in prep for *The Cryosphere*)

2. Das, I., Morlighem, M., Gudmundssen, H., Paden, J., Li, J., and Dias dos Santos, T. Basal conditions under Thwaites Glacier, Antarctica using IceBridge radar and ice sheet models. (in prep)

Accepted publications

Das, I., Padman, L., Bell, R., Fricker, H., Tinto, K., Hulba, C., Siddoway, C., Dhakal., T., Frearson, N., Cordero, I., Mosbeux, C., and Seigfried, M. Ice shelf Structure and Multi-decadal Basal Melt rates of Ross Ice Shelf, Antarctica using airborne ice penetrating radar. (accepted, *Journal of Geophysical Research-Earth Surface*)

Publications

1. Tinto, K. J., Padman, L., Siddoway, C. S., Springer, S. R., Fricker, H. A., Das, I., . . . Bell, R. E. (2019). Ross Ice Shelf response to climate driven by the tectonic imprint on seafloor bathymetry. *Nature Geoscience*, 12(6), 441-449. doi:10.1038/s41561-019-0370-2
2. Kingslake, J., Ely, J. C., Das, I., & Bell, R. E. (2017). Widespread movement of meltwater onto and across Antarctic ice shelves. *Nature*, 544(7650), 349-352. doi:10.1038/nature22049
3. Bell, R. E., Chu, W., Kingslake, J., Das, I., Tedesco, M., Tinto, K. J., . . . Lee, W. S. (2017). Antarctic ice shelf potentially stabilized by export of meltwater in surface river. *Nature, 544*(7650), 344.
4. Koenig, L., Ivanoff, A., Alexander, P., MacGregor, J., Fettweis, X., Panzer, B., . . . McConnell, J. (2016). Annual Greenland accumulation rates (2009–2012) from airborne snow radar. *Cryosphere (The), 10*, 1739-1752.

5. Das, I., Scambos, T. A., Koenig, L. S., Van Den Broeke, M. R., & Lenaerts, J. T. (2015). Extreme wind-ice interaction over Recovery Ice Stream, East Antarctica. *Geophysical Research Letters, 42*(19), 8064-8071.

6. Das, I., Hock, R., Berthier, E., & Lingle, C. S. (2014). 21st-century increase in glacier mass loss in the Wrangell Mountains, Alaska, USA, from airborne laser altimetry and satellite stereo imagery. *Journal of Glaciology, 60*(220), 283-293. doi:10.3189/2014JoG13J119

7. Bell, R. E., Tinto, K., Das, I., Wolovick, M., Chu, W., Creyts, T. T., . . . Paden, J. D. (2014). Deformation, warming and softening of Greenland's ice by refreezing meltwater. *Nature Geoscience, 7*(7), 497.

8. Das, I., Bell, R. E., Scambos, T. A., Wolovick, M., Creyts, T. T., Studinger, M., . . . Van Den Broeke, M. R. (2013). Influence of persistent wind scour on the surface mass balance of Antarctica. *Nature Geoscience, 6*(5), 367.

9. Bell, R. E., Ferraccioli, F., Creyts, T. T., Braaten, D., Corr, H., Das, I., . . . Rose, K. (2011). Widespread persistent thickening of the East Antarctic Ice Sheet by freezing from the base. *Science, 331*(6024), 1592-1595.

10. Das, I., & Sarwade, R. (2008). Snow depth estimation over north-western Indian Himalaya using AMSR-E. *International Journal of Remote Sensing, 29*(14), 4237-4248.

11. Das, I., Shukla, A., & Mohan, M. (2004). Aerosols in northeast Arabian Sea during the Indian winter monsoon: a study using sunphotometer measurements. *Current Science*, 1304-1308.

12. Das, I., and Mohan, M. (2003). Detection of marine aerosols using ocean colour sensors. *Mausam (Special Issue)*, 54, 1, 327-334

13. Das, I., Mohan, M., & Krishnamoorthy, K. (2002). Detection of marine aerosols with IRS P4-Ocean Colour Monitor. *Journal of Earth System Science, 111*(4), 425-435.

14. Satheesh, S. K., Moorthy, K. K., & Das, I. (2001). Aerosol spectral optical depths over the Bay of Bengal, Arabian Sea and Indian Ocean. *Current Science, 81*(12), 1617-1625.

White paper:

Koenig, L. and 21 others. The importance of understanding and quantifying surface processes over the cryosphere for improved climate and sea level rise predictions. (2015) ***White Paper*** submitted to NASA's Decadal Survey for Earth Science and Applications from Space

Conferences (2019-2014):

Oral presentations (including invited, plenary and keynote)

1. Das I., Padman, L., Bell, R., Fricker, H., Tinto, K., Siddoway, C., Seigfried, M. Airborne Radar Reveals Multi-Decadal Melt Rates for Ross Ice Shelf, Antarctica. Forum for Research into Ice Shelf Physics (FRISP), Oxford, UK, Sept 17, 2019
2. Das, I., MacGregor, J, Schlegel, N., Larour, E., and Poiner, K. Evolving Centennial-Scale Accumulation Rates in Greenland from Operation IceBridge Accumulation Radar. Program for Arctic Regional Climate Assessment (PARCA) Meeting, NASA Goddard, Jan 30-Feb 1, 2019
3. Das, I., Padman, L., Bell, R., Fricker, H., Tinto, K., Siddoway, C., Seigfried, M. Airborne Radar Reveals Multi-Decadal Melt Rates for Ross Ice Shelf, Antarctica. American Geophysical Union (AGU) 2018, Washington DC., Dec 10-14, 2018
4. Das I, Padman, L., Fricker, H., Bell, R., Tinto, K and the Rosetta Ice team. Multi-Decadal Averages of Basal Melt for Ross Ice Shelf, Antarctica Using Airborne Observations. West Antarctic Ice Sheet meeting (WAIS), Stony Point, NY, Sep 16-19, 2018
5. Das, I., Padman, L., Fricker, H., Bell, R., Tinto, K and the Rosetta Ice team. Multi-Decadal Averages of Basal Melt for Ross Ice Shelf, Antarctica Using Airborne Observations. AGU, 11-15 Dec, 2017
6. Das, I. and the Rosetta-Ice Team. Quantifying Multi-Decadal Basal Melt on the Ross Ice Shelf. WAIS Meeting, Seattle, 8-11 October, 2017
7. Das, I. Using Internal Layers in Ice to Quantify Mass Balance and Ice Flow History. International Glaciological Society (IGS) Conference in Boulder, Colorado, 14-19th August, 2017
8. Das, I., Buck, R., Csatho, B. Anomalous Precipitation Events and Possible Impacts on Subglacial Lakes. **Plenary session**, North-American CryoSat Science Meeting, Banff, Canada, 20-24th March, 2017
9. Das, I. Surface Mass Balance of Greenland: Remote Sensing Perspectives. **Keynote talk**, Surface Mass Balance Workshop at Lamont, September 9-11, 2016
10. Das I., and the Rosetta team. Surface and basal properties and structure of the Ross Ice Shelf, Antarctica. WAIS Meeting, Colorado, October 3-6, 2016
11. Das I., Scambos T., Koenig, L., van den Broke, M., Lenaerts, J. The role of winds in reducing surface mass balance of East Antarctica. **Invited talk**, AGU, 13-18 Dec, 2015.
12. Scambos, T., Vornberger, P., Bohlander, J., Klinger M., Pope, A., Das, I. Surface roughness and snow accumulation in East Antarctica. Invited talk at AGU, 13-18 Dec, 2015.
13. Das I., Scambos T., Koenig, L., van den Broke, M., Lenaerts, J. The role of winds in reducing surface mass balance of East Antarctica. New England Glaciology Meeting, 16-18April, 2015.

14. Das I., Scambos T., Koenig, L., van den Broke, M., Lenaerts, J. Complex wind-induced variations of accumulation rates over Recovery Ice Stream, East Antarctica. PARCA, January, 2015.
15. Das, I., Koenig, L., Scambos, T., van den Broke, M., Lenaerts, J. Understanding the role of wind in reducing the surface mass balance of East Antarctica. AGU fall meeting, 2014.
16. Das, I., Scambos, T., Koenig, L., van den Broeke, M., Paden, J., Sinisalo, A., Issaksson, E., Creyts, T., Bell, R.E., Lenaerts, J. Quantifying surface mass balance over East Antarctica using ice penetrating radars and ice cores. Scientific Committee on Antarctic Research (SCAR) conference, New Zealand, 25-28th August, 2014.

Poster presentations:

1. Lawhon, M*., Das, I., and Yuan, X. Using Artificial Neural Networks to understand climate variability over Ross Ice Shelf. AGU 2018, Washington DC., Dec 10-14, 2018 (* undergraduate intern poster)
2. Small, C. and Das, I. The Cryospheric Spectral Mixing Model. AGU 2018, Washington DC., Dec 10-14, 2018
3. Das I., Padman, L., Seigfried, M., Fricker, H., Chu, W., Tinto, W., and Bell, R. Mass Balance and structure of the Ross Ice Shelf. AGU 12-16 Dec, 2016
4. Das, I. and the ROSSETA team. Studying surface snow processes over Ross Ice Shelf. AGU, 13-18 Dec, 2015.
5. Das, I. Using IceBridge laser altimetry data and a positive degree day melt model to capture present day mass balance rates of Russell Glacier, Greenland. PARCA, January, 2015.