Prasanjit Dash's profile as of Jan 2014

Summary and contact information

Name	Prasanjit Dash
Education and Specialization	**PhD** (Physics, year 2004) Infrared satellite-based remote sensing
Current position and job title	Colorado State University CIRA **Research Scientist II, NOAA NESDIS**
Office Address	Department of Commerce National Oceanic & Atmospheric Admin. (NOAA), NCWCP E/RA3 5830 University Research Ct. College Park, MD 20740-3818, USA E-mail: *prasanjit.dash@gmail.com (private)* *prasanjit.dash@colostate.edu (academic)* *prasanjit.dash@noaa.gov (business)* Cell: +1(202)281-4430
Bio-page Linkedin	*www.star.nesdis.noaa.gov/star/Dash_P.php* *www.linkedin.com/pub/prasanjit-dash/18/692/387/*

Work experience

- Colorado State Univ.**, Cooperative Institute for Research in the Atmosphere (CIRA) Research Scientist II** (postdoc until Feb 2010), **NOAA NESDIS**, MD. 2006 – Present.

- Scientific staff at Meteorological Satellite Applications (MSA) group, Institute of Meteorology & Climate Research (IMK), **Forschungszentrum Karlsruhe** (FZK), Germany. 2000-2005

    - 2005: Eumetsat Visiting Sci. (short term postdoc) at MSA, IMK
    - 2004: **Geoland GMES EU** Project Scientist
    - 2000-2003: **Ph.D. student** at IMK, MSA, FZK
- Junior Res. Fellow at IIT-Kanpur, 1999

Major awards

- CIRA Res & Initiative Award, 2011. Awarded for the SST Quality Monitor (SQUAM): *http://www.star.nesdis.noaa.gov/star/news2011_201106CIRAAwards.php*

- Best Scientific Letter Award, 2002. Remote Sens. & Photogrammetry Soc. of the UK (*www.rspsoc.org*), and the Taylor & Francis Publishers (*www.tandf.co.uk*) for the year 2002, Int. J. of Remote Sensing (*open to researchers of all categories and ages*)

- German Academic Exchange Service (DAAD), 1998. Fellowship for higher study & industrial training in Germany (1998-June to Feb-2000) awarded by DAAD(*www.daad.de*)

- Council of Sci. & Ind. Research, 1998. Council of Scientific & Industrial Res. (*www.csir.res.in*) Junior Res. Fellowship, Earth Sciences, (1998), Lectureship eligibility in India

Professional services

- Current memberships/chair

    (1) Proactive in **Group for High Resolution SST** (*www.ghrsst.org*)
    Member:
    GHRSST Intercomparison TAG: *https://www.ghrsst.org/ghrsst-science/science-team-groups/ic-tag*/
    GHRSST SST Validation TAG: *https://www.ghrsst.org/ghrsst-science/science-team-groups/stval-wg/*
    Co-chair:
    GHRSST Applications & User Support:*https://www.ghrsst.org/ghrsst-science/science-team-groups/aus-tag/*
     (assist chair in user interaction of GHRSST SST products, solicit user feedback & involvement, guide users to effectively use SST products)
    (2) American Meteorological Society (AMS; *www.ametsoc.org*)
    (3) Indian Society of Remote Sensing (*www.isrsindia.org*)

- Journal reviewer:
  Remote Sensing of Environment, IEEE Geoscience and Remote Sensing Letters (GRSL), Journal of Geophysical Research, American Geophysical Union (AGU), IEEE Transactions on Geoscience and Remote Sensing (TGRS), Advances in Space Research, International Journal of Remote Sensing, J. of American Society for Photogrammetry & Remote Sensing

- Proposal reviewer:
  NASA postdoctoral program (in 2012)

Expertise

Scientific peer
- Sea surface temperature (SST) from satellites:
    - Monitoring/validation: *http://www.star.nesdis.noaa.gov/sod/sst/squam*
    - Algorithm development, cloud-mask, RT modeling over the oceans in SST bands
- Land surface temperature (LST) & emissivity from satellites

- ▪ PhD , Forschungszentrum Karlsruhe Germany EU project scientist
- ▪ Algorithm, cloud-detection, RT modeling over the land
- Infrared Radiative transfer modeling (RTM)
  - ▪ Extensive use of MODTRAN RTM and global validation, e.g.,
    http://www.sciencedirect.com/science/article/pii/S0034425708000801

Technical expertise
A. Programming:
- ▪ IDL : Extensive experience; all work in the SST Quality Monitor (SQUAM) is done with IDL: *www.star.nesdis.noaa.gov/sod/sst/squam/*
- ▪ Fortran: Extensive experience; global validation of MODTRAN RTM was performed using Fortran (see Special software section below).
- ▪ C: Extensive training during education (digital image processing)
- ▪ UNIX scripts/cron, OS: Extensive experience (process >30 global data everyday from various agencies). Proficient in UNIX/Linux OS environments

B. Web designing:
- ▪ HTML, CSS, JS, dygraphs: extensive experience (*www.star.nesdis.noaa.gov/sod/sst/squam/*). Designed the SQUAM web from scratch which has become the one-point diagnostic system for the global SST community.
- ▪ Experience with WYSIWYG S/W: Frontpage/Expression web

C. Special software:
- ▪ MODTRAN RTM (up to v4.2) for forward modeling of IR radiation
- ▪ Image processing: PCI, ERDAS Imagine, MapInfo

D. Scientific data formats
- ▪ Common formats (netCDF 3 & 4, HDF 4 & 5, binary, ASCII)
- ▪ GHRSST/community specs (L2P, L3, L4)

Linguistic skills, extra-curricular training and vocational certifications
A. International languages:
- ▪ English : Lifelong medium of instruction; fluent
- ▪ German: L1: Buchholtz T&B GmbH, Willy-Brandthaus, Berlin; L2: FTU, FZK

B. Indian national:
- ▪ Hindi: National language (fluent), Oriya: state language (mother tongue)
- ▪ Sanskrit: (basic), Bengali: regional language (basic)

C. Communication, vocational certifications:
- ▪ Suggestibility and personality; effective communication language. Certifications: (i) Foundations in Hypnotherapy (ii) Past-Life Regression Therapist, (iii) Smoking Cessation, (iv) Stage Hypnosis, (v) Master the Arm Raising, (vi) Rapid and Instant Inductions, (vii) Emotional Freedom Technique – EFT basics, (viii) Hypnosis and Pain Management, (ix) Hypnosis and Immune Disorders, (x) Hypnosis and ADD-ADHD

Cross-functional skills
A. **Scientific**: Handling large amount of data in various formats, their statistical analyses, inter-comparison; physical-statistical algorithm development to derive information from measurements.
B. **Communication and documentation**: Presentations at various levels (high to in-depth scientific), demonstrated writing skills in journals and technical documents, Excellent communication skills & point of contact for collaborations.
C. **Multi-cultural and collaborative**: Well-travelled and familiar with different cultures, strong communication skills & point of contact for collaborations, worked in multi-cultural environments.

Higher education

- **Ph.D. (Physics)**, 2000-2004
  - Faculty of Physics, **Karlsruhe Institute of Technology** (formerly were University of Karlsruhe & Forschungszentrum Karlsruhe; *http://www.kit.edu*).
  - Work performed at Met. Satellite App. (MSA) group, Inst. of Met & Clim. Res., **Forschungszentrum Karlsruhe** (*http://imk-msa.fzk.de*)
  - Thesis: Land surface temperature and emissivity retrieval from satellite measurements. *http://bibliothek.fzk.de/zb/berichte/FZKA7095.pdf*
- **M.Tech. (Remote Sensing applications)**, 1997-1999
  - Dept. of Civil Engg., **Indian Inst. of Tech. Kanpur**, *http://www.iitk.ac.in*; Dissertation work at **Technical University of Berlin**, *http://www.tu-berlin.de*), 1997 - 1999
  - Thesis: Seismic hazard studies in the Himalayas using remote sensing and GIS
- **M.Sc. in Earth Sciences (Applied Geology)**, 1995 - 1997
  - Dept. of Earth Sciences., **Indian Institute of Technology**, **Roorkee**, *http://www.iitr.ac.in* (formerly called University of Roorkee)

Selected international talks (conferences, workshops)

- The 2013 Joint EUMETSAT & AMS Met Sat Conf (*www.eumetsat.int*), 16-20 Sep 2013, Vienna, Austria
- Group for High Resolution Sea Surface Temperature XIV Annual meeting (*www.ghrsst.org*), 17-21 Jun, 2013, Woods hole, USA
- Meteo France/ O&SI SAF Workshop on polar SST, 5-7 Mar, 2013, Lannion, France
- The 2012 EUMETSAT Met Sat Conf & GSCIS meet (*www.eumetsat.int*), 3-7 Sep 2012, Sopot, Poland
- Group for High Resolution Sea Surface Temperature XIII Annual meeting (*www.ghrsst.org*), 4 to 8 Jun, 2012, Tokyo, Japan
- Group for High Resolution Sea Surface Temperature XII Annual meeting (*www.ghrsst.org*), 27-Jun to 01-Jul 2011, Edinburgh, UK
- Joint DVWG, HL-TAG & ST-VAL workshop, (*www.ghrsst.org*), 28-Feb to 02-Mar 2011, Boulder, CO
- AMS 17th conf. on Satellite Met. & Oceanography, Sep 27-30 2010, Annapolis, MD
- GOES-R AWG & Risk Reduction Review Meetings (*http://www.goes-r.gov*), Jul 20-24 2009, UMD, MD
- NPOESS IPO (*www.npoess.noaa.gov*) CalVal Meeting, July 23, 2009, Silver Springs, MD
- Joint 2007 EUMETSAT Met Sat Conf. & 15th Satellite Met. & Oceanography Conf. of American Meteorological Society, 24-28 September 2007, Amsterdam, The Netherlands (*www.eumetsat.int*)
- EUMETSAT Met. Sat Conf, 31 May - 4 Jun 2004, Prague, Czech Republic (*www.eumetsat.int*)
- 34th COSPAR assembly, World Space Cong, 10-19 Oct 2002,Houston
- EURISY (*www.eurisy.asso.fr*) Summer School, 1-7 Sep. 2001, Budapest, Hungary
- 14th ISRS (*www.isrsindia.org*) annual convention, 21-22 Nov. 2000, IIT-Kanpur, Kanpur, India
- 33rd COSPAR (*www.cosparhq.org*) assembly, 16-23 July 2000, Warsaw, Poland
- National Snow Science Workshop, Snow & Avalanche Study Est., (*www.drdo.org/labs/combat/sase*), 29-31 Oct. 1999, Manali, India
- Workshop on Chamoli earthquake and its after-impacts. 22-24 Oct. 1999, Wadia Institute of Himalayan Geology (*www.himgeology.com*), Dehra Dun, India
- SAR Interferometry technology and applications, CSRE, IIT-Bombay, 5-30 July 1999, IIT-B space technology cell (*www.csre.iitb.ac.in*), India

Selected projects

- **Polar PSDI ACSPO and NPOESS Data Exploitation (NDE) Project**, 2006-recent, Funded by NOAA Senior member of the Sea Surface Temperature (SST) team at NOAA NESDIS STAR, the responsible scientist for providing NRT diagnostics towards Quality Assurance (QA) of SST products.

- **NPOESS SST improvements and Ocean Cal/Val IPO** (reorganized as JPSS) project 2008-recent, Responsible for performing CalVal of SST algorithms for polar-orbiting satellites *(Internal use)*.

- **Joint Center for Satellite Data Assimilation (JCSDA),** 2010-2012, **Web-based near real-time monitoring of NCEP analysis and NAVOCEANO AVHRR SST products.** Co-PI and the responsible scientist for comparing NCEP Real Time Global (RTG) SST against products from other agencies. *Link: www.star.nesdis.noaa.gov/sod/sst/squam/L4*

- **SST Algorithm Working Group for the GOES-R program.** 2010-recent, Funded by GOES-R Program Office, responsible for developing prototype QA system.

- **CSP – Algorithm Theoretical Basis Document (ATBD) WP 8316 – Land Surface Temperature.** 2004, EC Proposal Ref. #.: FP-6-502871; EU priority project, the principal contributor for the ATBD v1.0 (*/postel.mediasfrance.org/IMG/pdf/CSP-0350-ATBD_LST-I1.00.pdf*)

Publications

Peer-reviewed journal articles

1. Group for High Resolution SST (GHRSST) Analysis Fields Inter Comparisons: Part 2. Near real-time web-based Level 4 SST Quality Monitor (L4-SQUAM), Deep Sea Research-II, 2012, **Dash, P**., Ignatov, A., Martin, M., Donlon, C., Brasnett, B., Reynolds, R. W., Banzon, V., Beggs, H., Cayula, J.-F., Chao, Y., Grumbine, R., Maturi, E., Harris, A., Mittaz, J., Sapper, J., Chin, T. M., Vazquez-Cuervo, J., Armstrong, E. M., Gentemann, C., Cummings, J., Piollé, J.-F., Autret, E., Roberts-Jones, J., Isizaki, S., Høyer, J. L., Poulter, D. (doi: *http://dx.doi.org/10.1016/j.dsr2.2012.04.002*)

2. Group for High Resolution SST (GHRSST) Analysis Fields Inter Comparisons: Part 1. A multi-product ensemble of sea surface temperature analyses, Deep Sea Research-II, 2012, Martin, M., **Dash, P**., Ignatov, A., Banzon, V., Beggs, H., Brasnett, B., Cayula, J.-F., Cummings, J., Donlon, C., Gentemann, C., Grumbine, R., Ishizaki, S., Maturi, E., Reynolds, R., and Roberts-Jones, J. (doi: *http://dx.doi.org/10.1016/j.dsr2.2012.04.013*)

3. Selecting a first-guess sea surface temperature field as input to forward radiative transfer model. Journal of Geophysical Research: Oceans, Vol. 117, C12001, doi:10.1029/2012JC008384., 2012, Saha, K., Ignatov, A., Liang, X.M., and **Dash, P**.

4. The SST Quality Monitor (SQUAM), Journal of Atmospheric & Oceanic Technology, Vol. 27, pp. 1899-1917, 2010, **Dash, P**., Ignatov, A, Kihai, Y., and Sapper, J.

5. Validation of Clear-Sky Radiances over Oceans Simulated with MODTRAN4.2 and Global NCEP GDAS Fields against NOAA15-18 and MetOp-A AVHRRs. Remote Sensing of Environment, Vol. 112, pp. 3012-3029, 2008, **Dash, P**. and Ignatov, A.

6. Separating surface emissivity and temperature using two-channel spectral indices emissivity composites comparison with a vegetation method. Remote Sensing of Environment, Vol. 96, No. 1, pp. 1-17, 2005, **Dash, P**., F.-M. Göttsche, F.-S. Olesen, and H. Fischer.

7. Emissivity and temperature estimation from MSG SEVIRI data; method validation with simulated and NOAA-14 AVHRR data. Advances in Space Research, Vol. 32, No. 11, pp. 2241-2246, 2003, **Dash, P**., F.-M. Göttsche, and F.-S. Olesen.

8. Potential of MSG for surface temperature and emissivity estimation: considerations for real-time applications. International Journal of Remote Sensing, Vol. 23, No.20, pp. 4511-4518, 2002, **Dash, P**., F.-M. Göttsche, and F.-S. Olesen.

9.   Land Surface Temperature and emissivity estimation from passive sensor data: theory and practice; current trends. International Journal of Remote Sensing, Vol. 23, No.13, pp. 2563-2594, 2002, **Dash, P**., F.-M. Göttsche, F.-S. Olesen, and H. Fischer. (Review Article)

10. Retrieval of land surface temperature and emissivity from satellite data- Physics, principle limitations & current trends. Journal of the Indian Society of Remote Sensing, Vol. 29, No. 1&2, pp. 23-30. **Dash, P**., F.-M. Göttsche, F.-S. Olesen, and H. Fischer.

11. Use of Multi-Sensor Data for the mapping of Desert regions. Advances in Space Research, Vol. 29, No. 1, pp. 51-55, 2002, Mishra, N. C., R. Kanwar, S. Sarkar, **P. Dash**, and R. P. Singh.

12. Anomalous stress pattern in Chamoli region observed from IRS 1B data. Vol. 78, No. 9, 10th May, 2000, pp. 1066 to 1070, Current Science. **Dash, P**., R. P. Singh, and F. Voss.

13. Brightness temperature study over Indian sub-continent. Vol. 55, May 2000, pp. 541-551, Journal of Geological Society of India, Mishra, N. C, **P. Dash**, and R. P. Singh.

14. Snow characterization using SSM/I data. Vol. 77, No. 9, Nov 1999, pp. 1180-1184, Current Science, Singh, R. P., N. C. Mishra, **P. Dash**, and B. K. Moharana.

15. Discrimination of cloud and snow covered regions using IRS-P3 MOS data. Vol. 77, No.4, Aug 1999, pp. 505-507, Current Science. Singh, R. P., S. Roy, and **P. Dash**.

Submitted for peer-review

16. Evaluation and selection of SST regression algorithms. Journal of Geophysical Research (Oct 2013). **Dash, P**., Petrenko, B., A. Ignatov, Y. Kihai, J. Stroup, and **P. Dash**.

Selected conference extended abstracts and presentations

17. Recent additions to the SST Quality Monitor (SQUAM). GHRSST XII Science team Meeting, 27 Jun - 01 Jul 2011, Edinburgh, Great Britain. **Prasanjit Dash** and Alexander Ignatov.

18. The SST Quality Monitor (SQUAM): An Overview. GHRSST Joint DVWG, HL-TAG & ST-VAL workshop, 28 Feb -02 Mar 2012, Boulder, Colorado. **Prasanjit Dash** and Alexander Ignatov. (link: *http://www.star.nesdis.noaa.gov/sod/sst/squam/documents/2011_03_03_GHRSST_DVTAG_STVAL_HLTAG_SQUAM.ppt*)

19. Recent improvements to the NESDIS SST Quality Monitor (SQUAM). American Meteorological Society (AMS) 17th conf. on Satellite Meteorology & Oceanography, 27-30 Sep 2010, Annapolis, MD. **Prasanjit Dash**, Alexander Ignatov, Yury Kihai, & John Sapper. (link: *www.star.nesdis.noaa.gov/sod/sst/squam/documents/SQUAM_RecentDevelopments_AMS_2010_Dash.pdf*)

20. The SST Quality Monitor (SQUAM). European MyOcean and STVAL meetings, 20-21 Jan 2010, Lannion, France. **Prasanjit Dash** and Alexander Ignatov (presented by Pierre LeBorgne). PPT link: (link:*http://www.star.nesdis.noaa.gov/sod/sst/squam/documents/2010_01_20_MYOCEAN_SQUAM.ppt*)

21. The near real-time SST Quality Monitor (SQUAM). GOES-R AWG & Risk Reduction Review Meetings (*http://www.goes-r.gov/)*, July 20-24 2009, Univ. of Maryland, Adelphi, MD. **Prasanjit Dash** *et al.*, link: (link: *http://www.star.nesdis.noaa.gov/sod/sst/squam/references.htm*).

22. The SST Quality Monitor (SQUAM). 2009 NPOESS CalVal Meeting, July23 2009, IPO Silver Springs, Maryland. **Prasanjit Dash** *et al.*, (ppt file: *http://www.star.nesdis.noaa.gov/sod/sst/squam/documents/ SQUAM_CALVAL_NPOESS_IPO_2009.ppt*)

23. The SST Quality Monitor (SQUAM). GHRSST users conference, May-June 2009, Santa Rosa, CA Alexander Ignatov *et al*.,. PPT and extended abstract available at the link: (link: *http://www.star.nesdis.noaa.gov/sod/sst/squam/references.htm*).

24. Web-based global quality control and monitoring of NESDIS AVHRR SST products for long term stability and cross-platform consistency in near real-time. American Meteorological Society (AMS) 89th Annual Meeting & 16th Conference on Satellite Meteorology and Oceanography, Jan 11-15, 2009, Phoenix, AZ, USA. **Prasanjit Dash**, Alexander Ignatov, Yury Kihai, John Sapper, & XingMing Liang. [*http://ams.confex.com/ams/pdfpapers/144238.pdf*]

25. Prototyping SST Retrievals from GOES-R ABI with MSG SEVIRI data. American Meteorological Society (AMS) 89th Annual Meeting, Jan 11-15, Phoenix, AZ, USA. N. Shabanov, A. Ignatov, B. Petrenko, Y. Kihai, X. Liang, W. Guo, F. Xu, **P. Dash**, M. Goldberg, & J. Sapper. [*http://ams.confex.com/ams/pdfpapers/143903.pdf*]

26. Development of a global QC/QA processor for operational NOAA 16-18 and MetOp AVHRR SST products. Joint EUMETSAT/AMS Met. Sat. Conf., 23.-28. September, 2007, Amsterdam, **Prasanjit Dash**, Alexander Ignatov, John Sapper, Yury Kihai, Alexander Frolov, Dilkushi de Alwis. [*http://www.eumetsat.int/Home/Main/Publications/Conference_and_Workshop_Proceedings/groups/cps/documents/document/pdf_conf_p50_s5_01_dash_p.pdf*]

27. Radiative Transfer Modeling of AVHRR Brightness Temperatures for Improved Sea Surface Temperature Retrievals: Initial Results, Ignatov, A, **Dash, P.**, 2007 AGU Joint Assembly, Acapulco, Mexico 22-25 May 2007.

28. Validation of the NESDIS operational Sea Surface Temperature products from AVHRR onboard NOAA 16-18. Dilkushi de Alwis, Alexander Ignatov, **Prasanjit Dash**, John Sapper, William Pichel, Xiaofeng Li, Yury Kihai, 2007 AGU Joint Assembly, Acapulco, Mexico 22-25 May 2007.

29. Intercomparison of Meteosat-8 derived LST with MODIS and AATSR similar products, LandSAF (Land- Satellite Application Facility) report in The 2005 EUMETSAT Met. Sat. Conf., 19.-23. September, 2005, Dubrovnik, Croatia, Proc. P.41, Madeira, C., **P. Dash**, F.-S. Olesen, & I. Trigo. [*http://www.eumetsat.int/groups/cps/documents/document/pdf_conf_p46_s4_05_trigo_v.pdf*]

30. Identifying an optimal land surface temperature validation site for MSG in the UAE, The 6th annual UAE university research conference, 24-26 April, 2005, Göttsche, F.-M., **P. Dash**, and F.-S. Olesen.

31. Optimal land surface temperature validation site in Europe. The 2004 EUMETSAT Met. Sat. Conf., 31 May - 4 June, 2004, Prague, Proc. P.41, pp. 248-254, **P. Dash**, F.-S. Olesen, and F. Prata. [*http://www.eumetsat.int/Home/Main/Publications/Conference_and_Workshop_Proceedings/groups/cps/documents/document/pdf_conf_p41_s2_dash_v.pdf*]

32. Combined analyses of land surface temperature and a vegetation index for surface characterisation. Adv. in Space Res., COSPAR-2002, Houston, TX, USA, F.-M. Göttsche, F.-S., Olesen, and **P. Dash**.

33. Bestimmung und Analyse der Temperatur von Landoberflächen aus Satellitendaten. Proceedings DACH Meteorologen Tagung 18-21 Sep 2001, Vienna, F.-S. Olesen, F.-M. Göttsche, and **P. Dash**.

34. Estimation of snow parameters using SSM/I data. Proceedings, National Snow Science Workshop, Snow Avalanche Study Establishment, Defense R & D Organization, 29-31 Oct 1999. Head Quarters, Manali. pp. 167-175. **P. Dash**, N. C. Mishra, and R. P. Singh.

35. Lineament fabric and stress pattern estimation from IRS-1B data & its implication in observed seismicity, 22-24 Oct 1999, Wadia Inst. of Himalayan Geology, Dehra Dun, **P. Dash** & R. P. Singh.

Major technical document

36. ATBD: LST CSP-0350-RP-0008-ATBDWP8316 (FP-6-502871), Book Captain: F.-S. Olesen, Contributing Authors: **P. Dash**, F.-M. Göttsche, A. Schmidt. (– 1st draft while as GEOLAND project scientist) [*http://postel.mediasfrance.org/IMG/pdf/CSP-0350-ATBD_LST-I1.00.pdf*]

- Citations: ~200 as of Dec, 2012 (list attached separately)