KANGARI NARENDER REDDY

Mobile : +91 9533615121 | **E-mail :** knreddyiitd@gmail.com | **WebPage :** https://knreddy.online/
Early Career Scientist | New Delhi, India | LinkedIn

Professional summary:

Early career scientist with experience in improving the process based models to better represent the vegetation dynamics, and estimate the carbon, energy, and water cycles, and also greenhouse gas emissions from vegetations. Author of 3 published journal articles (2 more articles communicated) with topics ranging from terrestrial fluxes in agroecosystems using land models, CLM5 and ISAM, to providing solutions to renewable sector using machine learning techniques. Reviewer of the journal Earth System Dynamics which focuses on contributions that investigate the various interactions between earth system components and the underlying mechanisms, ways how various components can be conceptualized, modelled, and quantified. Reviewer of the journal Geoscientific Model Development which is dedicated to the publication and public discussion of the description, development, and evaluation of numerical models of the Earth system and its components. Passionate mentor to master and PhD students, guiding them to produce quality research. Committed to maintain an active and healthy lifestyle.

Skills:

Land-Surface Modeling | Process-Based Models (CESM, ISAM, WRF, and SUCROS) | Land-Atmosphere Interactions | Climate-Change Impacts | Machine Learning in Climate science | Renewable Energy Meteorology | Scientific Writing and Publication | Strong Leadership | Scientific Project Management | Excellent Analytical Skills | Problem-Solving Skills | Work Independently and Collaboratively | Excellent Communication Skills | Proficient in Python, FORTRAN, Shell-scripting, and MATLAB | Experience in Machine learning techniques | Worked on High-Performance Computing (HPC) facilities |

Education :

Qualifications	Discipline	University	Year	Percentage
Ph.D.	Atmospheric & Oceanic Sciences	Centre for Atmospheric Sciences, IIT Delhi	2025 (thesis submitted for external review)	9 (CGPA)
M. Tech	Atmospheric & Oceanic Sciences	Centre for Atmospheric Sciences, IIT Delhi	2019	9.57 (CGPA) *1st RANK*
B. Tech	Mechanical Engineering	Vardhman College of Engineering, JNTU Hyderabad	2016	7.38 (CGPA)

Publications:

Research Papers (published):

1. **Reddy, K. N.**, et al.: Improving the representation of major Indian crops in the Community Land Model version 5.0 (CLM5) using site-scale crop data, Geosci. Model Dev., 18, 763–785, https://doi.org/10.5194/gmd-18-763-2025, 2025.

2. **Reddy, K. N.,** et al.: Carbon fluxes in spring wheat agroecosystem in India, Earth Syst. Dynam., 14, 915–930, https://doi.org/10.5194/esd-14-915-2023, 2023.
3. **Reddy, N. K.**, and Baidya Roy, S.: Layout Optimization for Offshore Wind Farms in India Using the Genetic Algorithm Technique, *Advances in Geosciences* 54 (October): 79–87. https://doi.org/10.5194/adgeo-54-79-2020, 2020.

Research Papers (communicated/in preparation):

1. **Reddy, K. N.**, and Baidya Roy, S.: Phenology, fluxes, and their drivers in major Indian agroecosystems: A modeling study using the Community Land Model (CLM5), EGUsphere [preprint], https://doi.org/10.5194/egusphere-2025-1987, 2025.
2. Yadav, R., **Reddy, K. N.**, and Baidya Roy, S.: Study on Indian Rice Agro-ecosystem using Site-Scale Observational Data (1970–2020). (**manuscript finished and to be submitted to Journal of Earth System Sciences—JESS)**

Datasets:

1. Varma, G. V., **Reddy, K. N.**, Baidya Roy, S., Yadav, R., Gayatri, V., Biswas, R.: Indian cereal crops (wheat and rice) phenology and agricultural management data across Indian croplands from 1960's to 2020 [dataset], PANGAEA, https://doi.org/10.1594/PANGAEA.964634, 2024.
2. Varma, G. V., **Reddy, K. N.**, Baidya Roy, S., Yadav, R., Gayatri, V., Biswas, R.: Weather data at experimental agricultural sites across Indian croplands from 1960's to 2020 [dataset], PANGAEA, https://doi.org/10.1594/PANGAEA.964635, 2024

Voluntary work:

Reviewer:

1. Earth System Dynamics
2. Geoscientific Model Development

Awards and achievements:

1. Research Excellence Travel Award (RETA) from IRD, IIT Delhi for presenting my work at EGU 2024. (Award provided to top 5% doctoral students)
2. Research Scholar Travel Award (RSTA) from IIT Delhi for presenting my work at EGU 2023.
3. Ganga Devi and Khem Chand Memorial Award for securing the highest CGPA in the MTech batch of 2019, CAS IIT Delhi, 2019
4. Best innovation award, Automotive IC Engine & Development training program conducted by Automotive Industry Simulation Internship, 2014
5. Talk at the 2024 CESM Land Model / Biogeochemistry Winter Working Group Meeting on Tuesday, February 27, 2024 (online).

Conference presentations and posters:

1. Yadav, R., **Reddy, K. N.,** and Baidya Roy, S.: Impact of Climate Change on Indian agroecosystems: Long-Term Trends from Site-Scale Data (1970-2020), EGU General Assembly 2025, Vienna, Austria. (Submitted to session CL3.2.2 – Impact of climate change on agriculture)

2. **Reddy, K. N.**, and Baidya Roy, S.: Impact of climate and agricultural management practices on carbon fluxes using a CLM5 land surface model, EGU General Assembly 2024, Vienna, Austria, 14–19 Apr 2024, EGU24-1159, https://doi.org/10.5194/egusphere-egu24-1159, 2024.
3. **Reddy, K. N.**, Baidya Roy, S., Bhattacharya, B. K., and Varma, G. V.: Improving crop dynamics in the CLM5 land surface model, EGU General Assembly 2023, Vienna, Austria, 24–28 Apr 2023, EGU23-6395, https://doi.org/10.5194/egusphere-egu23-6395, 2023.
4. **Reddy K. N.**, and Baidya Roy, S.: Improving the crop module in CLM5 to better represent the spring wheat grown in South Asia, AGU Fall Meeting 2022, available at: https://agu2022fallmeeting-agu.ipostersessions.com/Default.aspx?s=FA-F6-86-6E-95-F2-4A-5D-3C-58-CB-AA-AD-6C-E9-21, 2022.
5. **Reddy, K. N.**, Baidya Roy, S.: Layout optimization for a large offshore wind farm using Genetic Algorithm, EGU General Assembly 2020, Online 4-8 May 2020, EGU2020-12654, https://doi.org/10.5194/egusphere-egu2020-12654, 2020.
6. **Reddy, K. N.**, (2019): Offshore windfarm layout optimization, Clean Energy for Sustainable Economy, and Environment workshop, IIT Delhi, 21 September 2019.