# ADVERTISEMENT FOR RESEARCH FELLOWSHIPS UNDER MRFP RESEARCH FELLOW PROGRAM AT MoES ORGANIZATIONS (36 NOS.)

## (UR-18, OBC-8, SC- 4, ST-3, EWS-3)

The Ministry of Earth Sciences (MoES), Govt. of India is mandated to provide the nation with best possible services in forecasting the monsoons and other weather/climate parameters, ocean state, earthquakes, tsunamis and other phenomena related to earth systems through well integrated programmes. The Ministry also deals with science and technology for exploration and exploitation of ocean resources (living and non-living), and play nodal role for Antarctic/Arctic and Southern Ocean research. The ministry has 10 key organizations such as:

(1) India Meteorological Department (IMD)
(2) National Center for Medium Range Weather Forecasting (NCMRWF), Delhi
(3) National Center for Seismology, (NCS), Delhi
(4) Indian Institute of Tropical Meteorology (IITM), Pune
(5) Indian National Center for Ocean Information Services (INCOIS), Hyderabad
(6) National Center for Polar and Ocean Research (NCPOR), Goa
(7) National Institute of Ocean Technology (NIOT), Chennai
(8) National Center for Coastal Research (NCCR), Chennai
(9) National Center for Earth Science Studies (NCESS), Trivandrum
(10) Center for Marine Living Resources and Ecology (CMLRE), Kochi

The MoES invites applications for Junior/Senior Research Fellow Program (MRFP) to be coordinated by Development of Skilled Manpower in Earth System Sciences (DESK-ESSC), at Indian Institute of Tropical Meteorology, Pune. MRFP is Ministry's dedicated JRF/SRF program in which eligible fellows will be selected through a nation-wide selection processes and subsequent interviews. Selection will be against each of the advertised positions as below. Selected fellows initially will undergo induction training at IITM (of four months duration) and will be sent to the respective MoES organizations as per given in the advertisement. Selected candidates are required to complete Ph.D. in relevant fields by registering to a university as per the norms of the respective MoES organization where the fellow will be engaged in research. MRFP fellows will be provided with a two year JRF and two year SRF fellowship as per the DST guidelines and will undergo the stipulated evaluation processes therein.

**Qualifications:**

In addition to the basic qualifications as below table, candidate should have qualified NET/GATE/LS (CSIR/UGC/ICAR). Candidates appeared for final year of M.Sc./ M.S./ M.Tech can apply for the post and should write their aggregate marks upto the latest semester they have

appeared but their appointment is subject to having passed the M.Tech./M.Sc./M.S. examination as evidenced by mark sheets/provisional degree certificate.

Age Limit: 28 years as on last date of application; c) Stipend (JRF): Rs.31, 000/- p.m. plus admissible HRA;

d) Tenure: 04 years (as followed in DST norms)

For General and OBC Category: Minimum 60% aggregate mark in the qualifying examination is essential.

For SC/ST/Physically Handicapped Category: A Minimum 55% aggregate mark in qualifying examination is essential.

Candidates who would like to avail fellowship from CSIR/UGC/ICAR and work as JRF in MRFP are also encouraged to apply. Such candidates need to specify in the online application form about their preference of fellowship (whether availing MRFP Research Fellowship or CSIR/UGC/ ICAR fellowship).

Upper age limit is relaxed by 5 years for SC/ST, 3 years for OBC, 10 years for physically handicapped and as per rule for ex-servicemen.

Reservation: As per GOI norms. All applications have to be sent online via the online application link at https://iitmjobs.tropmet.res.in/job/rarf-mrfp-2020.php

Hard copy applications will not be accepted.

Last Date of Application: **30th April 2020**

Candidates should apply against respective Position Code. Applicants are allowed to apply for more than one position. In any circumstances wrong entry of position code will not be rectified after the application is submitted. In case of rectification required a fresh application may be filed within the last date of application.

| Position Code | Subject | Number of Positions | Qualifications | Desirable qualifications |
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| NCCR-MRFP-01 | Coastal Pollution Risk Assessment | 1 | M.Sc. in Marine Biology | Knowledge on coastal pollution and risk assessment of pollutants |

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| NCCR-MRFP-02 | Coastal process modelling | 1 | Master degree in Physics/Mathematics/ physical Oceanography /Computer Science or Applications | Experience in coastal process / hydrodynamic Modelling, participation in nearshore hydrodynamic field data collection or Experience in .Net /Asp .Net & c# .net for developing web applications Skill in shoreline / coastal data. |
| NCCR-MRFP-03 | Coastal water quality modeling | 1 | M.Sc. in Physics/Mathematics/ Atmospheric Sciences/Meteorology/Marine sciences or M.Tech in Atmospheric Science/Marine sciences or equivalent | Experience in Atmospheric/Oceanic Modelling and data analysis, Skill in FORTRAN, Matlab, Python and R programming Language/Working knowledge on ROMS, FVCOM and Wavewatch open source models etc. |
| NCCR-MRFP-04 | Marine litter and micro plastics | 1 | M.Sc. in Marine Biology/ Chemistry/ Microbiology | Experience in analytical instruments, microbiological analysis, water quality analysis. |
| NCCR-MRFP-05 | Coastal Hazard | 1 | M.Sc. in Physics/Geology /Oceanography/Social Science/equivalent OR M.Tech in Geo-informatics/Remote sensing | Experience in GIS/Remote Sensing, Satellite Data Processing. |
| IMD-MRFP-01 | Establishment of baseline relationships between weather, climate and health | 1 | M.Sc. in Physics/Mathematics/ Atmospheric Sciences/Meteorology/Geophysics (Meteorology) or M.Tech in Atmospheric Science/Meteorology | Experience in Atmospheric/Oceanic Model output analysis, Skill in FORTRAN programming Language/Software knowledge such as QGIS, Grads, NCL, CDO, FERRET etc. |
| IMD-MRFP-02 | Seasonal prediction of monsoon | 1 | M.Sc. in Physics/Mathematics/ Atmospheric Sciences/Meteorology/Geophysics (Meteorology) or M.Tech in Atmospheric Science/Meteorology | Experience in Atmospheric/Oceanic Model output analysis, Skill in FORTRAN programming Language/Software knowledge such as NCL, CDO, FERRET etc. |

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| IMD-MRFP- 03 | Hailstorm dynamics and prediction over Indian region using observations and high-resolution regional weather forecasting model(s). | 1 | M.Sc. in Physics/Mathematics/ Atmospheric Sciences/Meteorology<br><br>or M.Tech in Atmospheric Science/Meteorology | 1) Experience in analyzing large volume of Meteorological data.<br><br>2) Skill in PYTHON programming Language/Software knowledge such as GRADS, NCL, CDO, FERRET etc.<br><br>3) Experience in installation, post processing and analysis of the high-resolution regional model(s). |
| IMD-MRFP- 04 | Sub seasonal to seasonal climate variability, Climate Indices | 1 | M.Sc. in Physics/Mathematics/ Atmospheric Sciences/Meteorology/Geophysics (Meteorology) or M.Tech in Atmospheric Science/Meteorology | Experience in Atmospheric/Oceanic Model output analysis, Skill in FORTRAN programming Language/Software knowledge such as QGIS, Grads, NCL, CDO, FERRET etc. |
| NCESS-MRFP-01 | Near shore Coastal Processes | 2 | M.Sc. in Physical Oceanography/Ocean Sciences or M.Tech in Ocean Technology/Civil Engineering | Experience in oceanographic data collection in the near shore region, numerical modeling of coastal processes, and MATLAB programming |
| NCESS-MRFP-02 | Mesoscale Atmospheric Processes: Thunderstorm research | 1 | M.Sc. in Physics/Atmospheric Sciences/Meteorology/or M.Tech in Atmospheric Science/Meteorology. | Experience in Atmospheric regional Model analysis, Skill in FORTRAN programming Language/Software knowledge such as MATLAB, NCL, CDO or Experience in Atmospheric measurements/Participation in field campaigns etc. |

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| NCESS-MRFP-03 | Hydrochemistry & water/sediment quality modeling | 1 | M.Sc. in Chemistry/Analytical Chemistry/Hydrochemistry/ Environmental Chemistry | Experience in field works/water-sediment quality measurements/hydrological modeling/working knowledge of analytical instruments. |
| NCESS-MRFP-04 | Landslide investigations in Western Ghats | 1 | M.Sc./M.Tech in Geology/ Applied Geology | Experience in geological/ field investigations, GIS, geotechnical analysis and modeling tools. |
| NCS - MRFP-01 | Seismological Data Analysis | 2 | M.Sc. / M.Sc. (Tech.) in Geophysics / Applied Geophysics | Experience in geophysical / seismological data acquisition and analysis |
| NCS (BGRL) - MRFP-02 | Borehole Geophysics / Seismology under Koyna Scientific Deep Drilling Programme | 1 | M.Sc. / M.Sc. (Tech.) in Geophysics / Applied Geophysics | Experience in geophysical / seismological data acquisition and analysis |
| NCS (BGRL) - MRFP-03 | Petrological, Structural and Geochemical Studies in active seismic zones under Koyna Scientific Deep Drilling Programme | 1 | M.Sc. / M.Sc. (Tech.) in Geology / Applied Geology | Experience in field and laboratory studies related to structural geology and geochemistry in hard rock terrains. |
| CMLRE-MRFP-01 | Marine Biology/ Fisheries/ Marine Biotechnology | 1 | M.Sc. in Marine Biology/MFSc/MSc Marine Biotechnology | Experience in cruise participation. |
| CMLRE-MRFP-02 | Dynamics of eastern Arabian Sea | 1 | M.Sc in Physical Oceanography/Oceanography/Mathematics/Physics or M.Tech in Ocean Technology | Experience in Physical Ocean data processing, analysis and modeling |

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| INCOIS-MRFP-01 | Characterization of optically active substances using satellite remote sensing | 1 | M.Sc. in Physics / Chemistry / Environmental Science/ Oceanography / Marine Science | Knowledge in general oceanography, physical and bio-geo-chemical variability, basics of satellite oceanography, basic knowledge in phytoplankton biomass. |
| INCOIS-MRFP-02 | Numerical Ocean modeling and data assimilation | 1 | M.Sc. in Physical Oceanography/Physics/Meteorology/or M.Tech in Atmospheric Science/Meteorology | Experience in Oceanographic data analysis/Oceanic Model output analysis, |
| INCOIS-MRFP-03 | Ocean process studies | 2 | M.Sc. in Physical Oceanography/Physics/Meteorology/Atmospheric Sciences/Marine Sciences | Experience in oceanographic data analysis or Ocean Observations |
| NCMRWF-MRFP-01 | Data Assimilation | 3 | Post Graduate degree in Physical Sciences (Physics/Applied Physics/ Atmospheric Sciences/ Meteorology/Oceanography /Geophysics with Meteorology as one of the subjects/Climate Science or equivalent subjects) or Mathematical Sciences (Mathematics/Applied Mathematics or equivalent subjects)<br><br>**Candidates should have studied Physics/Mathematics at Graduation Level** | Good Knowledge in computer programming (Fortran/C/ Python etc.) and Linux/Unix (shell scripts).<br><br>Familiarization with numerical prediction and related fields.<br><br>Knowledge in Remote Sensing/Satellite Meteorology/GIS for **NCMRWF-MRFP-01**<br><br>Knowledge in Matlab/R/Big data Analytics/Machine Learning for **NCMRWF-MRFP-04**<br><br>Familiarization with parallel computing and knowledge in methods of data assimilation for **NCMRWF-MRFP-05** |
| NCMRWF-MRFP-02 | NWP Modelling | 1 | | |
| NCMRWF-MRFP-03 | Radar Meteorology | 1 | | |
| NCMRWF-MRFP-04 | Forecasting Extreme/Severe Weather events and Verification | 1 | | |
| NCMRWF-MRFP-05 | Ocean Modeling, Ocean data assimilation & Indian Ocean Processes. | 1 | | |

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| NCMRWF-MRFP-06 | Coupled Ocean-Atmospheric Modeling for hours to seasonal scale. | 1 | | |
| NIOT-MRFP-01 | Deep water wave spectral characteristics in Bay of Bengal and Arabian sea/ Oceanographic conditions of Arctic sea | 2 | Masters degree in Ocean Technology / civil engineering / coastal management / Mathematics or equivalent | Experience in data processing / Matlab programming / |
| NIOT-MRFP -2 ** | Isolation and culture of marine microbes and algae/Hatchery production and culture marine finfishes. | 2 | M.Sc. in Marine Biology/ Microbiology/ biotechnology/ | Experience in Isolation, identification of marine microbes, algae and mass culture for production of industrial important biochemicals / Breeding larval rearing, nursery rearing and culture of marine finfishes/ Physicochemical and biological analysis of seawater / sediment. |

**for NIOT MRFP-02 preference will be given to those from Andamans as the position(s) is for/ are for Andamans.