

Anshu Kumari
gästforskare
Space Physics Research Group
Avdelningen för fysik
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Anställning

Space Physics Research Group
Helsingfors universitet
University of Helsinki, Unknown
1 feb. 2020 → present

gästforskare

Avdelningen för fysik
Helsingfors universitet
Finland
20 jan. 2024 → 19 jan. 2025

Meritförteckning

Current Position

Postdoctoral Researcher at Space Physics Group, University of Helsinki, Finland (01/02/2020 - present)

Previous Work Experience

Postdoctoral Researcher at Indian Institute of Astrophysics, India (19/12/2019 - 29/01/2020)

Projects

RadioCME (Determining the space weather impact of coronal mass ejections using radio observations) project funded by the University of Helsinki (as a Postdoctoral fellow at University of Helsinki, 01/02/2022 - present)

SolMAG (Unraveling the structure solar flux ropes and their magnetosheath) ERC Consolidator Grant project (2017 -2022) led by Prof. Emilia Kilpua, University of Helsinki (as a Post-Doc fellow at University of Helsinki, 01/02/2020 - 31/01/2022)

FOREsail (Finnish Centre of Excellence in Research of Sustainable Space) funded by the Academy of Finland (as Post-Doc fellow at University of Helsinki, 02/2018 - present)

Technical Skills

Programming: MATLAB, C/C++, Python & Shell Scripting

Electronics: 4Nec2 Antenna Design Software, Xilinx Tool Suite, Simulink & LabView

Data Analysis: AIPS, CASA, IDL-solarsoft, Origin

Simulations: MPI-AMRVAC, CORMA, ELECTRICIT

Data Visualisation: ParaView, VisIT

Instruments: Vector Network Analysers, Spectrum Analysers & Mixed Signal Oscilloscopes

Research Experience

University of Helsinki, Finland Feb 2020 - present- Running and writing simulation codes for data driven time-dependent magneto-frictional modelling of flux ropes. - Long term statistical studies of solar radio bursts. - Teaching assistance to Solar Physics Course for University students (Undergrad, Masters and Ph.D.) - Mentored (co-supervised) two masters students for their masters thesis.

Indian Institute of Astrophysics - Gauribidanur Radio Astronomy Field Station, India Sep 2014 - Jan 2020- Gauribidanur RAdio HeliograPH (GRAPH) data reduction pipeline for 2D imaging of the solar corona in CASA. - Development of a ROACH based high spectral & temporal resolution spectro-polarimeter for observations of solar transients.

The Netherlands Institute for Radio Astronomy, ASTRON, The Netherlands Jun 2018 - Aug 2018- Data reduction pipeline for high resolution LOFAR interferometric solar data & Interferometric & tied array beam data analysis for Type III bursts and Coronal holes.

University of Mekele, Ethiopia May 2018- Multi wavelength analysis of type II bursts using space and ground based observations.

Awards & Achievements

- ASI Justice Oak thesis award 2021 Honourable Mention during Astronomical Society of India Meeting, 2022.- Young Scientist Award 2021 by Madhawi-Shyam Educational Trust.- K. D. Abhyankar Best presentation of thesis 2021 during Astronomical Society of India Meeting.- Awarded visiting scholar grant at Royal Observatory of Belgium, Belgium in 2020 (postponed due to COVID-19).- SCOSTEP travel grant award to attend COSPAR KSO Workshop at KodaiKanal Solar Observatory, India in 2020.- Invited seminar at Indian Institute of Astrophysics, India - 2018 at IIA, Bangalore.- Awarded Summer Fellowship at ASTRON, the Netherlands in 2018.- SCOSTEP travel grant award to attend COSPAR Capacity building workshop at Mekele, Ethiopia in 2018.- Invited talk at Neighborhood Astronomy Meeting (NAM) - 2018 at IIA, Bangalore.- Awarded Radionet travel grants to attend CESRA - 2018.- Awarded 32 hours of observation with the uGMRT.- Best Poster award in Astronomical Instrumentation at ASI - 2016.- Best Poster award in Instrumentation category at URSI-RCRS - 2015.- Qualified GATE-2013 (National eligibility exam for Engineers in India) with 98.83 percentile.- University 7th rank holder of 2008 - 2012 batch in Electronics & Communication.

Publikationer

The automatic identification and tracking of coronal flux ropes: I. Footpoints and fluxes

Wagner, A., Kilpua, E. K. J., Sarkar, R., Price, D. J., Kumari, A., Daei, F., Pomoell, J. & Poedts, S., sep. 2023, I: Astronomy & Astrophysics. 677, 12 s., A81.

Modeling the formation and eruption of coronal structures by linking data-driven magnetofrictional and MHD simulations for AR 12673

Daei, F., Pomoell, J., Price, D. J., Kumari, A., Good, S. & Kilpua, E. K. J., aug. 2023, I: Astronomy & Astrophysics. 676, 12 s., A141.

Type II radio bursts and their association with coronal mass ejections in solar cycles 23 and 24

Kumari, A., Morosan, D. E., Kilpua, E. K. J. & Daei, F., 6 juli 2023, I: Astronomy & Astrophysics. 675, 11 s., A102.

A type II solar radio burst without a coronal mass ejection

Morosan, D. E., Pomoell, J., Kumari, A., Kilpua, E. K. J. & Vainio, R., 4 juli 2023, I: Astronomy & Astrophysics. 675, 10 s., A98.

Effects of optimisation parameters on data-driven magnetofrictional modelling of active regions

Kumari, A., Price, D. J., Daei, F., Pomoell, J. & Kilpua, E. K. J., juli 2023, I: Astronomy & Astrophysics. 675, 12 s., A80.

Solar Coronal Density Turbulence and Magnetic Field Strength at the Source Regions of Two Successive Metric Type II Radio Bursts

Ramesh, R., Kathiravan, C. & Kumari, A., 20 jan. 2023, I: The Astrophysical journal. 943, 43, 6 s., 43.

Shock-accelerated electrons during the fast expansion of a coronal mass ejection

Morosan, D. E., Pomoell, J., Kumari, A., Vainio, R. & Kilpua, E. K. J., 1 dec. 2022, I: *Astronomy and Astrophysics*. 668, 13 s., A15.

Interferometric Imaging, and Beam-Formed Study of a Moving Type-IV Radio Burst with LOFAR

Liu, H., Zucca, P., Cho, K-S., Kumari, A., Zhang, P., Magdalenic, J., Kim, R-S., Kim, S. & Kang, J., 9 sep. 2022, I: *Solar Physics*. 297, 9, 15 s., 115.

Type IV Radio Bursts and Associated Active Regions in Sunspot Cycle 24

Kumari, A., 27 juli 2022, I: *Solar Physics*. 297, 7, 11 s., 98.

Exploring the Circular Polarisation of Low-Frequency Solar Radio Bursts with LOFAR

Morosan, D. E., Räsänen, J. E., Kumari, A., Kilpua, E. K. J., Bisi, M. M., Dabrowski, B., Krankowski, A., Magdalenic, J., Mann, G., Rothkaehl, H., Vocks, C. & Zucca, P., 20 apr. 2022, I: *Solar Physics*. 297, 4, 17 s., 47.

Trends and characteristics of high-frequency type II bursts detected by CALLISTO spectrometers

Umuhire, A. C., Uwamahoro, J., Raja, K. S., Kumari, A. & Monstein, C., 15 okt. 2021, I: *Advances in Space Research*. 68, 8, s. 3464-3477 14 s.

New Results on the Direct Observations of Thermal Radio Emission from a Solar Coronal Mass Ejection

Ramesh, R., Kumari, A., Kathiravan, C., Ketaki, D. & Wang, T. J., 28 apr. 2021, I: *Geophysical Research Letters*. 48, 8, 9 s., ARTN e2020GL091048.

Imaging and Spectral Observations of a Type-II Radio Burst Revealing the Section of the CME-Driven Shock That Accelerates Electrons

Majumdar, S., Tadepalli, S. P., Maity, S. S., Deshpande, K., Kumari, A., Patel, R. & Gopalswamy, N., apr. 2021, I: *Solar Physics*. 296, 4, 16 s., 62.

Moving solar radio bursts and their association with coronal mass ejections

Morosan, D. E., Kumari, A., Kilpua, E. K. J. & Hamini, A., 25 mars 2021, I: *Astronomy & Astrophysics*. 647, 5 s., 12.

Solar Radio Spectro-polarimetry (50-500 MHz) : Design and Development of Cross-Polarized Log-Periodic Dipole antenna and configuration of receiver system

Kumari, A., GVS, G., Kathiravan, C., V, M. & V Barve, I., 13 jan. 2021, (!E-pub ahead of print) I: *arXiv e-prints*. s. 1 25 s.

On the occurrence of type IV solar radio bursts in the solar cycle 24 and their association with coronal mass ejections

Kumari, A., Morosan, D. & Kilpua, E., 11 jan. 2021, I: *The Astrophysical journal*. 906, 2, 9 s., 79.

Electron acceleration and radio emission following the early interaction of two coronal mass ejections

Morosan, D. E., Palmerio, E., Räsänen, J. E., Kilpua, E. K. J., Magdalenic, J., Lynch, B. J., Kumari, A., Pomoell, J. & Palmroth, M., 13 okt. 2020, I: *Astronomy & Astrophysics*. 642, 13 s., 151.

Low-Frequency Radio Observations of the "Quiet" Corona During the Descending Phase of Sunspot Cycle 24

Ramesh, R., Kumari, A., Kathiravan, C., Ketaki, D., Rajesh, M. & Vrunda, M., 28 sep. 2020, I: *Geophysical Research Letters*. 47, 18, 8 s., ARTN e2020GL090426.

Direct Estimates of the Solar Coronal Magnetic Field Using Contemporaneous Extreme-ultraviolet, Radio, and White-light Observations

Kumari, A., Ramesh, R., Kathiravan, C., Wang, T. J. & Gopalswamy, N., 8 aug. 2019, I: *The Astrophysical journal*. 881, 1, s. 24 32 s.

On the usefulness of existing solar wind models for pulsar timing corrections

Tiburz, C., Verbiest, J. P. W., Shaifullah, G. M., Janssen, G. H., Anderson, J. M., Horneffer, A., K'unsem'oller, J., Osłowski, S., Donner, J. Y., Kramer, M., Kumari, A., Porayko, N. K., Zucca, P., Ciardi, B., Dettmar, R-J., Griebmeier, J-M., Hoefl, M. & Serylak, M., juli 2019, I: *Monthly notices of the Royal Astronomical Society: Letters*. 487, 1, s. 394 408 s.

The First Low-frequency Radio Observations of the Solar Corona on ≈ 200 km Long Interferometer Baseline
Mugundhan, V., Ramesh, R., Kathiravan, C., Gireesh, GVS., Kumari, A., Hariharan, K. & Indrajit, VB., 1 mars 2018, I: Astrophysical Journal Letters. 855, L8, s. 1-4 s.

Addendum to: Strength of the Solar Coronal Magnetic field - A Comparison of Independent Estimates Using Contemporaneous Radio and Whitelight Observations
Kumari, A., Ramesh, R., Kathiravan, C. & Wang, J-T., dec. 2017, I: Solar Physics. 292, 12, s. 177

Strength of the Solar Coronal Magnetic field - A Comparison of Independent Estimates Using Contemporaneous Radio and Whitelight Observations
Kumari, A., Ramesh, R., Kathiravan, C. & Wang, J-T., nov. 2017, I: Solar Physics. 292, 11, s. 161

New Evidence for a Coronal Mass Ejection-driven High Frequency Type II Burst near the Sun
Kumari, A., Ramesh, R., Kathiravan, C. & Gopalswamy, N., juli 2017, I: The Astrophysical journal. 843, 1, s. 10

Aktiviteter

Solar Radio Spectro-polarimetry (50 - 500 MHz)

Anshu Kumari (!!Speaker)
3 dec. 2022

Source Sizes of Fine Structures in Type II Radio Bursts with LOFAR Interferometric Observations

Anshu Kumari (!!Speaker)
3 dec. 2022

URSI Regional Conference on Radio Science

Anshu Kumari (Talare: Presentation)
1 dec. 2022 → 4 dec. 2022

Aditya-L1 Support Cell Second Workshop 2022

Anshu Kumari (Talare: Presentation)
28 nov. 2022 → 30 nov. 2022

Introduction to Flare data analysis in UV and Radio wavelengths

Anshu Kumari (!!Speaker)
28 nov. 2022

International Centre for Theoretical Sciences (ICTS)

Anshu Kumari (Besökande forskare)
24 nov. 2022

Giant Metrewave Radio Telescope (GMRT)-NCRA

Anshu Kumari (Besökande forskare)
16 nov. 2022 → ...

National Centre for Radio Astrophysics - Tata Institute of Fundamental Research (TIFR-NCRA), Pune

Anshu Kumari (Besökande forskare)
14 nov. 2022 → 17 nov. 2022

Inter-University Centre for Astronomy and Astrophysics

Anshu Kumari (Besökande forskare)
10 nov. 2022 → 11 nov. 2022

Indian Institute of Science Education & Research (IISER) - Pune

Anshu Kumari (Besökande forskare)

7 nov. 2022 → 9 nov. 2022

Indian Institute of Science (IISc) - Bangalore

Anshu Kumari (Besökande forskare)

4 nov. 2022

Raman Research Institute (RRI), Bangalore

Anshu Kumari (Besökande forskare)

3 nov. 2022

European Space Weather Week 2022

Anshu Kumari (Poster presentation)

24 okt. 2022 → 28 okt. 2022

On the source sizes of fine structures of type II radio bursts using LOFAR

Anshu Kumari (!!Speaker)

27 sep. 2022

PLANETARY, SOLAR, AND HELIOSPHERIC RADIO EMISSIONS

Anshu Kumari (Talare: Presentation)

26 sep. 2022 → 28 sep. 2022

Solar Physics High Energy Research (SPHERE) Workshop

Anshu Kumari (Närvarande)

11 juli 2022 → 15 juli 2022

Pencil Code User Meeting 2022

Anshu Kumari (Närvarande)

4 maj 2022 → 10 maj 2022

Space Weather Workshop 2022

Anshu Kumari (Poster presentation)

26 apr. 2022 → 28 apr. 2022

Indian Women in Space

Anshu Kumari (Talare: Presentation)

9 apr. 2022

Effects of optimisation parameters on data-driven magnetofrictional modelling

Anshu Kumari (!!Speaker)

26 mars 2022

40th Annual Meeting of the Astronomical Society of India

Anshu Kumari (Närvarande)

25 mars 2022 → 29 mars 2022

Planetary Space Weather Workshop

Anshu Kumari (!!Speaker)

25 mars 2022

Physics Days 2022

Anshu Kumari (Poster presentation)
3 mars 2022

Solar Radio Spectro-Polarimetry (50 - 500 MHz): Design and Development of Cross-Polarized Log-Periodic Dipole Antenna and Configuration of Receiver System

Anshu Kumari (!!Speaker)
23 feb. 2022

Second ESCAPE Virtual Observatory school

Anshu Kumari (Närvarande)
22 feb. 2022 → 24 feb. 2022

Solar and Space Physics Decadal Survey White Papers Workshop #2:

Anshu Kumari (Närvarande)
22 feb. 2022 → 23 feb. 2022

FinCOSPAR 2022

Anshu Kumari (Närvarande)
17 feb. 2022 → 18 feb. 2022

Type II radio bursts and their association with coronal mass ejections

Anshu Kumari (!!Speaker)
17 feb. 2022

SPACE RADIATION WORKSHOP

Anshu Kumari (Närvarande)
24 jan. 2022 → 28 jan. 2022

First Indian Space Weather Conference (ISWC-2022)

Anshu Kumari (Närvarande)
11 jan. 2022 → 12 jan. 2022

Type II radio bursts and their association with coronal mass ejections

Anshu Kumari (!!Speaker)
11 jan. 2022

Advances in Space Research (Tidskrift)

Anshu Kumari (Referentgranskare)
2022 → ...

Astrophysics and Space Science (Tidskrift)

Anshu Kumari (Referentgranskare)
2022 → ...

Physica Scripta (Tidskrift)

Anshu Kumari (Referentgranskare)
2022 → 2023

Remote Sensing (Tidskrift)

Anshu Kumari (Referentgranskare)
2022 → ...

Universe (Tidskrift)

Anshu Kumari (Referentgranskare)

2022 → ...

FASR 2021

Anshu Kumari (Närvarande)
1 dec. 2021 → 3 dec. 2021

The Multiview Observatory for Solar Terrestrial Science (MOST) Virtual Science Meeting

Anshu Kumari (Närvarande)
17 nov. 2021 → 18 nov. 2021

ALMA-SOL-IMG Workshop 2

Anshu Kumari (Närvarande)
3 nov. 2021 → 5 nov. 2021

Baltic Applied Astroinformatics and Space data Processing

Anshu Kumari (Närvarande)
23 sep. 2021 → 24 sep. 2021

Online Workshop on High Performance Computing for Astronomy and Astrophysics

Anshu Kumari (Närvarande)
20 sep. 2021 → 23 sep. 2021

Online Radio Heliophysics Catch-up Meeting

Anshu Kumari (Närvarande)
10 maj 2021 → 13 maj 2021

Heliophysics 2050

Anshu Kumari (Närvarande)
3 maj 2021 → 7 maj 2021

Effects of optimisation parameters on data-driven magnetofrictional modelling

Anshu Kumari (!!Speaker)
26 apr. 2021

Space Weather Workshop 2021

Anshu Kumari (Närvarande)
20 apr. 2021 → 22 apr. 2021

EGU General Assembly 2021

Anshu Kumari (Talare: Presentation)
19 apr. 2021 → 30 apr. 2021

Sub-second structures in low frequency solar radio observations

Anshu Kumari (Närvarande)
30 mars 2021 → 1 apr. 2021

Physics Days 2021

Anshu Kumari (Poster presentation)
24 mars 2021 → 26 mars 2021

6th LOFAR Data School

Anshu Kumari (Närvarande)
22 mars 2021 → 26 mars 2021

Association of type IV radio bursts with CMEs in solar cycle 24

Anshu Kumari (!!Speaker)

3 mars 2021

IIA-50 Conference "Advances in Observations and Modelling of Solar Magnetism and Variability"

Anshu Kumari (Talare: Ordförande)

2 mars 2021

IIA-50 Conference "Advances in Observations and Modelling of Solar Magnetism and Variability"

Anshu Kumari (Talare: Presentation)

1 mars 2021 → 4 mars 2021

ISWAT Virtual Meeting Series - G2A Cluster

Anshu Kumari (Närvarande)

23 feb. 2021 → 26 feb. 2021

Radio Polarimetric Imaging of the Solar Corona at Low Frequencies

Anshu Kumari (!!Speaker)

21 feb. 2021

Multi-payload and Multi-Observatory Science with Aditya-L1

Anshu Kumari (Närvarande)

19 feb. 2021

39th Annual Meeting of the Astronomical Society of India (ASI)

Anshu Kumari (Talare: Presentation)

18 feb. 2021 → 23 feb. 2021

SKA in India: Preparing for building the SKA

Anshu Kumari (Närvarande)

17 feb. 2021 → 18 feb. 2021

The SDO 2021 Science Virtual Workshop

Anshu Kumari (Närvarande)

12 feb. 2021 → 30 juni 2021

Second AI and Data Science and Earth and Space Science Workshop

Anshu Kumari (Närvarande)

9 feb. 2021 → 11 feb. 2021

ISU Adelaide Conference 2021

Anshu Kumari (Närvarande)

6 feb. 2021 → 7 feb. 2021

On the association of type IV radio bursts with CMEs in solar cycle 24

Anshu Kumari (!!Speaker)

1 feb. 2021

43rd COSPAR Scientific Assembly

Anshu Kumari (Talare: Presentation)

28 jan. 2021 → 4 feb. 2021

European Space Week 2020

Anshu Kumari (Närvarande)

7 dec. 2020 → 11 dec. 2020

Space Physics seminar

Anshu Kumari (!!Speaker)

3 dec. 2020

Science at Low Frequencies VII

Anshu Singh (Närvarande)

1 dec. 2020 → 4 dec. 2020

CASA VLBI Workshop

Anshu Singh (Närvarande)

2 nov. 2020 → 6 nov. 2020

European Space Weather Symposium 2020

Anshu Singh (Poster presentation)

2 nov. 2020 → 6 nov. 2020

IIA Science Story Series

Anshu Singh (Talare: Presentation)

26 sep. 2020

Online Advanced Study Program on Helicities in Astrophysics and Beyond

Anshu Kumari (Närvarande)

1 sep. 2020 → 31 dec. 2020