

# Mihailo M. Martinović

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Associate Research Professor

Lunar and Planetary Laboratory      *Work:* 520-626-9810  
University of Arizona                      *Cell:* 520-548-4221  
1629 East University Boulevard      mmartinovic@arizona.edu  
Tucson, AZ 85721                              mihailomartinovic88@gmail.com

APPOINTMENTS	<b>Lunar &amp; Planetary Laboratory, University of Arizona, USA</b> Associate Research Professor	2026 - present
	<b>Lunar &amp; Planetary Laboratory, University of Arizona, USA</b> Researcher / Scientist V	2023 - 2026
	<b>Lunar &amp; Planetary Laboratory, University of Arizona, USA</b> Researcher / Scientist III	2021 - 2023
	<b>Lunar &amp; Planetary Laboratory, University of Arizona, USA</b> Postdoctoral Research Associate	2018 - 2021
	<b>Laboratory for Space Research and Instrumentation in Astro- physics (LESIA), Paris Observatory, France</b> Affiliated Fellow	2016 - 2024
	<b>Faculty of Mathematics, University of Belgrade, Serbia</b> Assistant Research Professor	2017 - present
	<b>Faculty of Mathematics, University of Belgrade, Serbia</b> Associate Researcher	2017
	<b>IHIS Techno Experts, Belgrade, Serbia</b> Associate Researcher	2015 - 2017
	<b>IHIS Techno Experts, Belgrade, Serbia</b> Junior Researcher	2013 - 2015
EDUCATION	<b>LESIA, Paris Observatory, France / Faculty of Mathematics, University of Belgrade, Serbia (co-mentorship)</b> Doctor of Astronomy and Astrophysics <i>A study of quasi-thermal noise and shot noise in space plasmas</i> Chair: Milan Maksimović (France) & Stevo Šegan (Serbia) Committee: Christophe Sauty, Adolfo F. Viñas, Jagoš Purić, Hervé Lamy, Dušan Jo- vanović	2016
	<b>Faculty of Physics, University of Belgrade, Serbia</b> Master of Theoretical and Experimental Physics <i>Phenomena on silicon caused by compression plasma flow action</i> Chair: Ivan Dojčinović Committee: Bratislav Obradović, Jagoš Purić, Ivan Dojčinović	2012
	<b>Faculty of Physics, University of Belgrade, Serbia</b> Bachelor in Applied & Computational Physics	2011

RESEARCH  
INTERESTS

Space and Astrophysical Plasmas  
Quasi-Thermal Noise Spectroscopy  
Kinetic Plasma Physics  
Solar Wind Turbulence

RESEARCH

**University of Arizona**

**Tucson, AZ**

**Lunar and Planetary Laboratory**

2018-present

Postdoctoral Research Associate & Researcher / Scientist

Advisor: Kristopher Klein

- Performs a comprehensive solar wind heating and waves mission analysis at 1 au over three solar cycles
- Builds the first high-frequency electric field Quasi-Thermal Noise (QTN) spectrometers for measuring ionospheric plasmas
- Developed and posted a user-friendly software that simulates the plasma solar wind plasma unstable behavior using a cascade of Machine Learning models
- Develops a 130-million large CDAWeb *Wind* mission electron moment data survey using QTN spectroscopy
- Developed a comprehensive kinetic exospheric plasma model of the solar wind
- Described the response of the *Parker Solar Probe (PSP)* electric antennas crucial for plasma measurements via QTN spectroscopy
- Systematized characteristics of magnetic field Switchbacks observed by (*PSP*) at various spatial and temporal scales
- Described properties of stochastic heating by low-frequency Alfvénic turbulence, and compared these models to existing data from both the *Helios* and *PSP*
- Delivered a comprehensive description of plasma linear instabilities behavior in the inner heliosphere using *Helios* observations
- Developed the model of the electric antenna response model for *PSP* Fields instrument
- Developed an algorithm that derives plasma parameters from the QTN measurements on *Wind* mission, and is able to automatically cover 25 years of observations
- Provided support to *PSP Solar Wind Electrons, Alphas and Protons (SWEAP)* instrument team in data calibration and processing
- Provided technical and scientific support in analysis of linear stability of plasma streams from *Helios* and *PSP* data

**University of Belgrade**

**Belgrade, Serbia**

**Faculty of Mathematics**

2016-2018

Associate Researcher & Assistant Research Professor

- Developed the theory of QTN Spectroscopy in anisotropic plasmas, and described its observable properties
- Collaborated in a project that described response of a monopole antennas in ionospheric plasma, and provided predictions of adequate QTN measurements
- Derived analytical description of an artificial satellite motion under influence of atmospheric drag

**Paris Observatory**

**Paris, France**

**Laboratory for Space Investigation and Instrumentation**

2013 - 2016

Graduate Student

Advisors: Milan Maksimović, Arnaud Zaslavsky, Stevo Šegan

- Determined electron temperature on Solar Terrestrial Research Observatory (STEREO)

spacecraft using QTN, making up for missing data from malfunctioning particle analyzers

- Developed a theory of QTN in Earth's ionosphere, with emphasize on lower layers
- Upgraded orbit limited theory for different probe shapes, obtaining analytical solutions for plasmas that contain suprathermal particles

**University of Belgrade**

**Belgrade, Serbia**

**Faculty of Physics**

2011-2013

Undergraduate Student, Master Student

Advisors: Milorad Kuraica, Ivan Dojčinović

- Derived Stark shifts of Helium lines' forbidden components in optical and near UV spectrum, and confirmed results in Grimm type glow discharge experiment
- Described properties of a quasistationary plasma flow interaction with silicon, with fundamentally different phenomena depending on the magnetic field configuration, simulating conditions in tokamak divertors

EXTERNAL  
FUNDING  
(GRANTS)

*Non-linear Solar Wind Turbulent Heating from 0.08 to 5.2 AU*

NASA ROSES - Heliophysics Living With a Star Science Program

**Principal Investigator**, 2022-2026, approx. \$965,000 total funding

*Measuring Plasma Parameters and Waves in The Ionosphere of Earth*

NASA ROSES - Heliophysics Technology and Instrument Development for Science

**Principal Investigator**, 2023-2026, approx. \$781,000 total funding

*Study of Ion Velocity Distributions and Kinetic Wave Activity Observed in the Acceleration Region of the Solar Wind with Theory, Modeling, and Machine Learning*

NASA ROSES - Heliophysics Theory, Modeling and Simulations

**Co-Principal Investigator**, 2023-2024, approx. \$457,475 total funding

*Plasma Parameters From Wind Mission Radio Observations Using Quasi-Thermal Noise Spectroscopy*

NASA Heliophysics Data Environment Enhancements

**Principal Investigator**, 2024-2025, approx. \$75,000 total funding

*Investigation of Electron Parameter Statistical Distributions and Association with Structures using QTN Spectroscopy*

NASA Heliophysics Unsolicited Research Grant

**Co-Principal Investigator**, 2019-2022, approx. \$150,000 total funding

*Investigation of Electron Structures in the Solar Wind Using Quasi-Thermal Noise Spectroscopy*

Arizona Space Grant

**Principal Investigator**, 2019-2021, 2023, approx. \$30,000 total funding

INTERNAL  
FUNDING  
(UNIVERSITY  
OF ARIZONA)

*NanoSatellite Platform of the University of Nairobi - Zero Gravity Peace Mission*

University of Arizona Space Institute, Mission Proposal Development Seed Funding

**Deputy Principal Investigator**, 2024, approx. \$71,000 total funding

PROJECTS

<sup>1</sup> *Solar Orbiter Radio and Plasma Waves (RPW) instrument*

ESA Class M mission

**Co-Investigator**, 2017-present, approx. \$580M total funding

*Parker Solar Probe Fields and Solar Wind Electrons, Protons and Alphas (SWEAP) instrument*

NASA Heliophysics Flagship Mission

**Postdoctoral Research Associate / Researcher**, 2018-present, approx. \$1.8B total funding

*Influence of Collisional Processes on the Astrophysical Plasma Spectra*

Project of Ministry of Education, Science and Technological Development of the Republic of Serbia

**Co-Principal Investigator**, 2015-2020, approx. \$1M total funding

*Plasma Induced Antenna Noise Spectroscopy for Space Weather*

ESA Unsolicited Research Grant

**Graduate Student**, 2013-2014, approx. \$240,000 total funding

## SERVICE

### **Professional Service**

European Space Agency Solar Orbiter Radio and Plasma Waves (RPW) Science Team [2018 - present]

International Space Science Institute, Science Team 650, Team Leader [2025-2026]

International Space Science Institute, Science Team 563, External Expert [2023]

NASA ROSES, Panelist [2024]

National Science Foundation, Panelist [2020, 2021]

Frontiers in Astronomy and Space Sciences, Guest Editor [2021 - present]

Air Force Research Laboratory, Air Force Office of Scientific Research, Panelist [2023]

University of Arizona, Provost Investment Fund Grants, Panelist [2022]

Space Plasma Science Discussion Group - co-organizer [2021 - present]

SigmaPhi 2023 Conference Advisory Committee

Mentoring a High School Student within Scientist in the Classroom Program [2020]

SHINE Conference Student Poster Judge [2019]

Serbian National Team for the International Olympiad in Astronomy Coaching Staff [2016]

*Journal Referee [37] (number of articles per journal)*

The Astrophysical Journal (8)

Geophysical Research Letters (5)

Astronomy & Astrophysics (5)

Journal of Geophysical Research: Space Physics (5)

Plasma Physics and Controlled Fusion (4)

Physics of Plasmas (5)

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<sup>1</sup>Here are listed current and past projects that I have or had an active role in, but am not directly funded from at this time.

The Astrophysical Journal Letters (3)  
International Journal of RF and Microwave Computer-Aided Engineering (2)  
Solar Physics (1)  
Journal of Physics D: Applied Physics (1)  
Frontiers in Astronomy and Space Sciences (1)  
Physica Scripta (1)

*Member [4]*

American Geophysical Union  
International Astrophysical Union  
American Physical Society  
Serbian Astronomical Society

PRESENTATIONS      **CONFERENCE & MEETING PRESENTATIONS [INVITED] [10]**

*How Secondary Population Drifts Regulate Low-Beta Solar Wind Stability*, American Geophysical Union Fall Meeting, New Orleans, LA, Dec. 2025

*How Kinetic Processes Regulate the Interactions between Solar Wind and Earth's Bow-Shock*, Meeting on Operational and Research Capabilities for Better Understanding Solar-Terrestrial Interactions, Belgrade, Serbia, September 2025

*Machine Learning in Plasma Instability Analysis; SAVIC Software*, Annual Meeting of the Asia Oceania Geosciences Society, Singapore, July 2025

*Electric Field Sampling from Aurora to Electron Scales*, Lunar & Planetary Laboratory Conference, Tucson, AZ, August 2023

*Multi-Dimensional Description of Ion-Driven Instabilities in the Inner Heliosphere*, Parker Solar Probe Theory Group, July 2023

*WINS: Waves, Instabilities & Noise*

*Spectrometer for Earth's Ionosphere*, University of Arizona space Institute Symposium, Tucson, AZ, May 2023

*Switchbacks and non-linear plasma heating in the inner heliosphere; Helios and PSP observations*, Laboratory for Atmospheric and Space Physics, University of Colorado, Boulder, CO, April 2022

*The Enhancement of Proton Stochastic Heating in the near-Sun Solar Wind*, Department of Astrophysical and Planetary Sciences, University of Colorado, Boulder, CO, October 2019

*Kappa parameter estimations using quasi-thermal noise spectroscopy* SigmaPhi International Conference on Statistical Physics, Corfu, Greece, June 2017

*A study of quasi-thermal noise and shot noise in space plasmas* Serbian Astronomical Conference, Belgrade, Serbia, October 2017

OUTREACH

**PUBLIC SEMINARS [2]**

*Parker Solar Probe: A Civilization Milestone*, Sun City Astronomy Club, Oro Valley, AZ, October 2024

*Solar Wind and Near-Earth Satellites*, Kolarčeva zadužbina, Belgrade, Serbia, March 2017

- MENTORING      **University of Belgrade**      2017-2019
- Co-mentored PhD thesis on interplanetary dust observations (Kristina Racković Babić)
- University of Arizona**      2018-present
- Graduate level research project on Quasi-Thermal Noise in solar wind plasma
  - Arizona Space Grant - 4 undergraduate projects solar wind plasma and radio instrumentation
  - Waves, Instabilities & Noise Spectrometer (WINS) instrument - 7 undergraduate internships

PUBLICATIONS      **TEXTBOOKS, DISSERTATIONS AND MONOGRAPHS [2]**

**Martinović M. M.** & Šegan S. *Basics of astronomy and astrophysics for non-astronomers (in Serbian)*, University of Belgrade, Faculty of Mathematics, *University Textbook*, ISBN 978-86-7589-128-4 (232 pages)

**Martinović M. M.** *A study of quasi-thermal noise and shot noise in space plasmas*, LESIA, Paris Observatory / University of Belgrade, Faculty of Mathematics, *Doctoral Dissertation* (148 pages)

**PUBLIC SOFTWARE AND PACKAGES [1]**

**Martinović M. M.** & Klein, K. G. *Stability Analysis Vitalizing Instability Classification (SAVIC)*, doi: 10.5281/zenodo.10581356

**NASA MISSION DATA SURVEYS [1]**

**Martinović M. M.**, Klein, K. G. & Wilson, L. *Plasma Parameters From Wind Mission Radio Observations Using Quasi-Thermal Noise Spectroscopy*, doi: 10.5281/zenodo.12614515

CDAWeb: WIND\_WAVES\_QTNFIT, WIND\_WAVES\_QTNFIT\_FILTERED

**PEER REVIEWED JOURNAL ARTICLES [53;H-INDEX 20; CITATIONS: 1885]<sup>2,3</sup>**

Klein K. G., **Martinović M. M.** et al (4<sup>th</sup> of 9 authors) *Ion-Scale Wave Emission and Absorption for Non-Maxwellian Velocity Distributions in the Inner Heliosphere*, JGRA, **53** e2025GL118809., 2026, doi: 10.1029/2025GL118809

Zheng X., **Martinović M. M.** & 10 others *First in Situ Estimates of the Sheath Resistance for the PSP FIELDS Antenna Employing an Electron Shot Noise Model*, ApJ, **997** 137,

<sup>2</sup>As of March 3, 2026 from Google Scholar

<sup>3</sup>ORCID ID: 0000-0002-7365-0472

2026,

doi: 10.3847/1538-4357/ae25e6

Yoon P., **Martinović M. M.** et al (4<sup>th</sup> of 11 authors) *Regulation of temperature anisotropy for solar wind protons and alpha particles by collisions and instabilities*, A&A, **705** A14, 2026, doi: /doi.org/10.1051/0004-6361/202557070

Zheng X., **Martinović M. M.** & 7 others *Electrostatic Thermal Noise in Magnetized Weakly Ionized Collisional Plasmas*, JGRA, **131** e2025JA034176, 2025, doi: 10.1029/2025JA034176

Badman S., **Martinović M. M.** et al (19<sup>th</sup> of 21 authors) *Multispacecraft Measurements of the Evolving Geometry of the Solar Alfvén Surface over Half a Solar Cycle*, ApJ, **995** L37, 2025, doi: 10.3847/2041-8213/ae0e5c

Sioulas N., **Martinović M. M.** et al (9<sup>th</sup> of 13 authors) *Higher-order Analysis of Three-dimensional Anisotropy in Imbalanced Alfvénic Turbulence*, ApJ, **993** 142, 2025, doi: 10.3847/1538-4357/ae0934

Zheng X., Liu K., **Martinović M. M.** & 8 others *Quasithermal Noise in Magnetized Plasma: Theory and Simulations*, ApJ, **985** 114, 2025, doi: 10.3847/1538-4357/add00f

**Martinović M. M.**, Klein K. G., De Marco, R., Verscharen, D., Bruno R. & D'Amicis, R. *Impact of Two-population  $\alpha$ -particle Distributions on Plasma Stability*, ApJL, **988** L25, 2025, 10.3847/2041-8213/adeaac

Ofman L., Yogesh, Broadsen, S. A., Mostafavi, P., Jian L. K., Sadykov V. M., Klein K. G. & **Martinović M. M.** *Modeling Hot, Anisotropic Ion Beams in the Solar Wind Motivated by the Parker Solar Probe Observations near Perihelia*, ApJ, **986** L28, 2025, 10.3847/2041-8213/ad812

Yogesh, **Martinović M. M.** et al (5<sup>th</sup> of 12 authors) *Evidence of Interaction between Ion-scale Waves and Ion Velocity Distributions in the Solar Wind*, ApJ, **986** 119, 2025, 10.3847/2041-8213/add467

Sadykov V. M., Ofman L., Broadsen, S. A., Yogesh, Mostafavi, P., Jian L. K., Klein K. G. & **Martinović M. M.** *Identification of Ion-kinetic Instabilities in Hybrid-PIC Simulations of Solar Wind Plasma with Machine Learning*, ApJS, **279** 28, 2025, 10.3847/1538-4365/addd07

Huang J., **Martinović M. M.** et al (6<sup>th</sup> of 23 authors) *The Temperature Anisotropy and Helium Abundance Features of Alfvénic Slow Solar Wind Observed by Parker Solar Probe, Helios, and Wind Missions*, ApJL, **986** L28, 2025, 10.3847/2041-8213/ade0ac

Dazzi, P., Issautier, K., Meyer-Vernet, N., Henri, P. & **Martinović M. M.**, *Quasi-Thermal Noise Spectroscopy in Magnetized Space Plasma: Theory and Model*, JGRA **130** e2024JA033325, 2025, doi: 10.1029/2024JA033325

Afshari A., **Martinović M. M.** et al (6<sup>th</sup> of 11 authors) *Direct observation of ion cyclotron damping of turbulence in Earth's magnetosheath plasma*, Nat Comm, **15** 7870, 2024, doi: 10.1038/s41467-024-52125-8

- Furman S., Chasapis, A., Malaspina, D., Tatum, P., Short, B., George, H, & **Martinović M. M.** *Estimated Heating Rates Due to Cyclotron Damping of Ion-scale Waves Observed by the Parker Solar Probe*, ApJ, **976** L1, 2024, doi: 10.3847/2041-8213/ad8c38
- Shankarappa N., Klein, K. G., **Martinović M. M.** & Bowen, T. A. *Estimated Heating Rates Due to Cyclotron Damping of Ion-scale Waves Observed by the Parker Solar Probe*, ApJ, **973** 20, 2024, doi: 10.3847/1538-4357/ad5f2a
- Yoon P., Lazar, M., Salem, C., Seough, J., **Martinović M. M.**, Klein, K. G., & López, R. *Boundary of the Distribution of Solar Wind Proton Beta versus Temperature Anisotropy*, ApJ, **969** 77, 2024, doi: 10.3847/1538-4357/ad47f1
- Yoon P., **Martinović M. M.** et al (4<sup>th</sup> of 9 authors) *Regulation of Solar Wind Electron Temperature Anisotropy by Collisions and Instabilities*, ApJ, **975** 105, 2024, doi: 10.3847/1538-4357/ad7b09
- Zheng X., **Martinović M. M.** & 9 others *Radial Evolution of Non-Maxwellian Electron Populations Derived from Quasi-thermal Noise Spectroscopy: Parker Solar Probe Observations*, ApJ, **977** 39, 2024, doi: 10.3847/1538-4357/ad7d05
- Zheng X., Liu K, **Martinović M. M.**, Pierrard V., Klein, K. G., Liu M., He Q., Cheng K. Liu Y. & Wang, Y. *Solar Wind Density and Core Temperature Derived from the PSP Quasi-thermal Noise Measurements*, ApJ, **963** 154Z, 2024, doi: 10.3847/1538-4357/ad236d
- Martinović M. M.** & Klein, K. G. *Ion-Driven Instabilities in the Inner Heliosphere II: Classification and Multi-Dimensional Mapping*, ApJ, **952** 14M, 2023, doi: 10.3847/1538-4357/acdb79
- Huang J., **Martinović M. M.** et al (7<sup>th</sup> of 27 authors) *The Structure and Origin of Switchbacks: Parker Solar Probe Observations*, ApJ, **952** 33H, 2023, doi: 10.3847/1538-4357/acd17e
- Shankarappa N., Klein, K. G. & **Martinović M. M.** *Estimation of turbulent proton and electron heating rates in the young solar wind constrained by Parker Solar Probe observations*, ApJ, **946** 85S, 2023, doi: 10.3847/1538-4357/acb542
- Liu M., **Martinović M. M.** et al (7<sup>th</sup> of 14 authors) *Total Electron Temperature Derived from Quasi-Thermal Noise Spectroscopy In the Pristine Solar Wind: Parker Solar Probe Observations*, A&A, **674** A49, 2023, doi: 10.1051/0004-6361/202245450
- Martinović M. M.**, Klein, K. G. & Krishnan, H. G. *Wind/Waves Antenna Length Determined Using Quasi-Thermal Noise Spectroscopy*, RNAAS, **6** 166, 2022, doi: 10.3847/2515-5172/ac8b0a
- Martinović M. M.** & 9 others *Plasma Parameters From Quasi-Thermal Noise Observed by Parker Solar Probe: A New Model for the Antenna Response*, JGRA, **127** e2021JA030182, 2022, doi: 10.1029/2021JA030182
- Vech, D, **Martinović M. M.** & 22 others *Wave-particle energy transfer directly observed in an ion cyclotron wave*, ApJ, **650** A10, 2022, doi: 10.1051/0004-6361/202039296
- Martinović M. M.**, Klein, K. G., Ďurovcová, T & Alterman, B. L. *Ion-Driven Instabilities in the Inner Heliosphere I: Statistical Trends*, ApJ, **923** 116M, 2021, 10.3847/1538-4357/ac3081

Perez, J, Chandran B. D. G., Klein K. G. & **Martinović M. M.** *Heat or work? How Alfvén waves energize the solar wind*, JPIPh, **87** 2, 2021, doi: 10.1017/S0022377821000167

**Martinović M. M.**, Klein, K. G. & 22 others *Multiscale Solar Wind Turbulence Properties inside and near Switchbacks measured by Parker Solar Probe*, ApJ, **912** 28, 2021, doi: 10.3847/1538-4357/abebe5

Maksimović M., **Martinović M. M.** et al (88<sup>th</sup> of 104 authors) *First observations and performance of the RPW instrument onboard the Solar Orbiter mission*, A&A, **656** 41, 2021, 10.1051/0004-6361/202141271

Hadid L., **Martinović M. M.** et al (32<sup>th</sup> of 46 authors) *Solar Orbiter's first Venus flyby: Observations from the Radio and Plasma Wave instrument*, A&A, **656** 18, 2021, 10.1051/0004-6361/202140934

Klein K. G., **Martinović M. M.** et al (12<sup>th</sup> of 15 authors) *Inferred Linear Stability of Parker Solar Probe Observations Using One-and Two-component Proton Distributions*, ApJ, **909** 7, 2021, doi: 10.3847/1538-4357/abd7a0

Schlickeiser, R, **Martinović M. M.** & Yoon P. H. *Subluminal electrostatic noise in isotropic space plasmas. General formulas and nonrelativistic thermal limit*, PoP, **28** 052110, 2021, doi: 10.1063/5.0049643

Simić, Z, Sakan N. M., Milovanović N. & **Martinović M. M.** *Singly Ionized Iridium Spectral Lines in the Atmosphere of Hot Stars*, IAARS, **3** 33, 2021

Bourouaine, S., Perez, Jean C., Klein, K. G., Chen, C. H. K., **Martinović M. M.**, Bale, S. D.; Kasper, J. C. & Raouafi, N. E. *Turbulence Characteristics of Switchback and Non-switchback Intervals Observed by Parker Solar Probe*, ApJ, **904** 30B, 2020, doi: 10.3847/2041-8213/abbd4a

Wooley A. W., **Martinović M. M.** et al (12<sup>th</sup> of 13 authors) *Proton core behaviour inside magnetic field switchbacks*, MNRAS, **498** 5524W, 2020, doi: 10.1093/mnras/staa2770

Maksimović M., **Martinović M. M.** et al (97<sup>th</sup> of 104 authors) *The Solar Orbiter Radio and Plasma Waves (RPW) instrument*, A&A, **642** 12M, 2020, doi: 10.1051/0004-6361/201936214

Zouganelis M., **Martinović M. M.** et al (106<sup>th</sup> of 183 authors) *The Solar Orbiter Science Activity Plan. Translating solar and heliospheric physics questions into action*, A&A, **642** 3Z, 2020, doi: 10.1051/0004-6361/202038445

**Martinović M. M.**, Klein K. G. & 7 others *Solar Wind Electron Parameters Determination on Wind Spacecraft Using Quasi-Thermal Noise Spectroscopy*, JGRA, **125** A028113, 2020, doi: 10.3847/1538-4365/ab527f

**Martinović M. M.**, Klein K. G. & 19 others *The Enhancement of Proton Stochastic Heating in the near-Sun Solar Wind*, ApJS, **246** 30M, 2020, doi: 10.3847/1538-4365/ab527f

Case A. W., **Martinović M. M.** et al (20<sup>th</sup> of 20 authors) *The Solar Probe Cup on Parker Solar Probe*, ApJS, **246** 43C, 2020, doi: 10.3847/1538-4365/ab5a7b

Huang J., **Martinović M. M.** et al (6<sup>th</sup> of 30 authors) *Proton Temperature Anisotropy Variations in Inner Heliosphere Estimated with the First Parker Solar Probe Observations*, *ApJS*, **246** 70H, 2020, doi: 10.3847/1538-4365/ab74e0

Maksimović, M., & **Martinović M. M.** et al (9<sup>th</sup> of 20 authors) *Anti-correlation Between the Bulk Speed and the Electron Temperature in the Pristine Solar Wind: First Results from Parker Solar Probe and Comparison with Helios*, *ApJS*, **246** 62M, 2020, doi: 10.3847/1538-4365/ab61fc

Maj R., Cairns, I. & **Martinović M. M.** *Impedance and Voltage Power Spectra of a Monopole Antenna in a Warm Plasma - Derivations and Application to CubeSats*, *RS*, **55** 006956, 2020, doi: 10.1029/2019RS006956

Klein K. G., **Martinović M. M.**, Stansby, D. & Horbury, T. *Linear Stability in the Fast Solar Wind: Helios Reëvaluated*, *ApJ*, **887** 234K, 2019, doi: 10.3847/1538-4357/ab5802

Kasper, J. C., **Martinović, M. M.** et al (24<sup>th</sup> of 48 authors) *Alfvénic velocity spikes and rotational flows in the near-Sun solar wind*, *Nature*, 2019, **576** 228 doi: 10.1038/s41586-019-1813-z

**Martinović M. M.**, Klein K. G. & Bourouaine S. *Radial Evolution of Stochastic Heating in Low- $\beta$  Solar Wind*, *ApJ* **879** 43M, 2019, doi: 10.3847/1538-4357/ab23f4

**Martinović M. M.** & Šegan S. *Satellite Orbit Under Influence of a Drag - Analytical Approach*, *SAS* **195** 53, 2017, doi: 10.2298/SAJ1795053M

**Martinović M. M.**, Zaslavsky, A., Maksimović, M. & Šegan S. *Electrostatic thermal noise in a weakly ionized collisional plasma*, *RS* **52** 70, 2017, doi: 10.1002/2016RS006189

**Martinović M. M.** *Orbit Limited Theory in the Solar Wind -  $\kappa$  Distributions*, *SAS* **192** 27, 2016, doi: 10.2298/SAJ160220004M

**Martinović M. M.**, Zaslavsky, A., Maksimović, M., Meyer-Vernet, N., Šegan S., Zouganelis, I., Salem, C., Pulupa, M. & Bale, S. D. *Quasi-thermal noise measurements on STEREO: Kinetic temperature deduction using electron shot noise model*, *JGRA* **121** 129, 2016, doi: 10.1002/2015JA021710

Cvetanović N., **Martinović M. M.**, Obradović, B. M. & Kuraica, M. M. *Electric field measurement in gas discharges using stark shifts of He I lines and their forbidden counterparts*, *JPhysD* **48** 205201, 2015, doi: 10.1088/0022-3727/48/20/205201

#### CONFERENCE PROCEEDINGS [3]

**Martinović M. M.**, Zaslavsky, A., Maksimović, M. & Issautier K. *Quasi-thermal noise spectroscopy in Earth's magnetosheath: Theory and application to plasma diagnostic on WIND spacecraft*, *Publications of the Astronomical Observatory of Belgrade* **96** 141, 2017

**Martinović M. M.**, Dojčinović I. P., J. Purić & J. *Perpendicular magnetic field influence on silicon surface modification by quasistationary plasma flow*, *International Symposium on the Physics of Ionized Gases* **26**, 216, 2012

**Martinović M. M.**, Vuković, K, Dojčinović I. P. & J. Purić, J. *Plasma flow interaction with materials of interest for fusion devices*, *Advances in Applied Plasma Science* **26**, 216, 2011

**SUBMITTED [2]**

Zheng X., **Martinović M. M.** & 8 others *Electrostatic Thermal Noise in Magnetized Weakly Ionized Collisional Plasmas*, ApJ

Klein, K. G., **Martinović M. M.** et al (4<sup>th</sup> of 9 authors), Ion-Scale Wave Emission and Absorption for non-Maxwellian Velocity Distributions in the Inner Heliosphere, GRL

**CONFERENCE PRESENTATIONS, SEMINARS AND COLLOQUIA [25]**

*Secondary Ion Populations as Regulators of Low-Beta Stability from Solar Wind to Laboratory Plasmas*, APS Division of Plasma Physics 67th Annual Meeting, November 2025

*Sensitive Dependence of Weakly Collisional Dynamics on Precise Distribution Measurements*, NASA Heliophysics Science Division Seminar, September 2025

*Two Solar Cycles of High-Resolution Electron Observations at L1 Point from Quasi-Thermal Noise Spectroscopy*, Lunar and Planetary Laboratory Conference, August 2025

*Impact of Two-Population  $\alpha$ -particle Distributions on Plasma Stability*, EGU General Assembly, April 2025

*Stability of the Helium Beam Population in the Solar Wind*, AGU Fall Meeting, Dec. 2024

*Characterizing the Impact of Two-Population Alpha Distributions on Plasma Stability in the Inner Heliosphere*, Seventh Parker Scholars Meeting, May 2024

*Overview of Ion-Driven Instabilities in the Inner Heliosphere*, EGU General Assembly, April 2024

*Stability Analysis Vitalizing Instability Classification (SAVIC)*, Python in Heliophysics Community Meeting, March 2024

*Overview and Classification of Solar Wind Instabilities in the Inner Heliosphere*, Second Parker Scholars Meeting, Apr. 2023

*Switchbacks and non-linear plasma heating in the inner heliosphere; Helios and PSP observations*, Laboratory for Atmospheric and Space Physics, University of Colorado, Boulder, CO, Apr. 2023

*Overview and Classification of Solar Wind Instabilities in the Inner Heliosphere*, AGU Fall Meeting, Dec. 2022

*Semi-Empirical Multi-base Exospheric Model of the Solar Wind*, Parker Two Conference, Jun. 2022

*Ion-Driven Instabilities as Observed by Helios*, APS DPP Meeting, Nov. 2021

*Multiscale Solar Wind Turbulence Properties inside and near Switchbacks measured by Parker Solar Probe*, AGU Fall Meeting, Dec. 2020

*On Stochastic Ion Heating in the Inner Heliosphere: Radial Trends and Parker Solar Probe Observations*, APS DPP Meeting, Nov. 2020

*Solar Wind Electron Parameters Determination on Wind Spacecraft Using Quasi-Thermal Noise Spectroscopy*, Wind Team meeting, Sep. 2020

*Stochastic Heating of the Solar Wind becomes increasingly significant close to the Alfvén critical Point*, Parker Solar Probe Science Working Group, CLASP, University of Michigan, Ann Arbor, MI, June 2019

*Radial Evolution of Stochastic Heating in the Inner Heliosphere*, LPL, University of Arizona, Tucson, AZ, Feb. 2019

*Electron Velocity Distribution Function moments deduction using Quasi-Thermal Noise from Wind Thermal Noise Receiver*, Parker Solar Probe Fields Team Meeting, SSL, University of California, Berkeley, CA, Dec. 2018

*Solar wind and artificial satellites in proximity of Earth*, Kolarac Foundation Facility, Belgrade, Mar. 2017

*Electron temperature measurements with S/WAVES using a shot noise model*, Parker Solar Probe Fields Team Meeting, SSL, University of California, Berkeley, CA, Dec. 2015

*Quasi-Thermal Noise in Space Plasmas*, LESIA Ph.D day, Paris Observatory, May 2016

*Interplanetary medium research at Paris Observatory*, Faculty of Mathematics, Belgrade, Nov. 2014

*Energetic aspects and modeling of the solar wind*, Astronomical Observatory of Belgrade, Nov. 2014

*Quasi-thermal noise spectroscopy in magnetosheath of Earth*, XVII National Conference of Astronomers of Serbia, Belgrade, Sep. 2014

*On the thermal noise from particles with flat-top distribution function*, LESIA Plasma Group Seminar, Paris Observatory, July 2013

CONFERENCE CONTRIBUTIONS [62]

**Martinović M. M.**, Klein, K. G., Niranjana *Non-Linear Turbulent Heating in The Inner Heliosphere: Effects of Solar Wind Evolution and Solar Activity*, AGU Fall Meeting SH33C-2527, December, 2025

**Martinović M. M.** & 5 others *How Secondary Population Drifts Regulate Low-Beta Solar Wind Stability*, AGU Fall Meeting SH33E-2553, December, 2025

Sadykov, V. M., **Martinović M. M.** et al (8<sup>th</sup> of 8 authors) *Identification of Ion-Kinetic Instabilities in Solar Wind Plasma with Machine Learning: from Hybrid-PIC Simulations to Observational Data*, AGU Fall Meeting SH13G-2164, December, 2025

Alterman, B. L., **Martinović M. M.** et al (8<sup>th</sup> of 17 authors) *Interpretable Machine Learning for ICME Identification: Leveraging Solar Wind Helium Abundance, Compressibility, and Cross Helicity*, AGU Fall Meeting SM51A-03, December, 2025

Paulson, K., **Martinović M. M.** et al (7<sup>th</sup> of 10 authors) *Resonant Wave-Particle Interactions Observed by the Solar Probe Cup*, AGU Fall Meeting SH43C-2612, December, 2025

Davis, N., Chandran, B. D. G., **Martinović M. M.**, Alterman B. L. *Instability Constraints on Proton Beams in the Solar Wind: Theory Meets Observation*, AGU Fall Meeting SH33E-2555, December, 2025

Yoon, P. H., **Martinović M. M.** et al (6<sup>th</sup> of 9 authors) *Boundaries of the “Brazil Plots” for Solar Wind Protons, Core-and-halo Electrons, and Alpha Particles*, AGU Fall Meeting SH33E-2550, December, 2025

Krupar, V., **Martinović M. M.** et al (8<sup>th</sup> of 16 authors) *HelioSwitch: A High-Purity Parker Solar Probe Switchback Catalog*, AGU Fall Meeting SH33D-2544, December, 2025

Larson, D. E., **Martinović M. M.** et al (22<sup>th</sup> of 28 authors) *Energy Flux Contributions and Alfvénic Wave Dynamics in the Inner Heliosphere: Results from Parker Solar Probe Encounters 22–24*, AGU Fall Meeting SH31A-05, December, 2025

Klein, K. G., **Martinović M. M.** et al (4<sup>th</sup> of 10 authors) *Statistical Distributions of Elsasser Variables in the Near Sun Environment*, AGU Fall Meeting SH22B-02, December, 2025

Alterman, B. L., **Martinović M. M.** et al (8<sup>th</sup> of 21 authors) *Solar Wind Helium Abundance: A Fixed-Amplitude Solar Activity Indicator for Space Weather Forecasting*, AGU Fall Meeting SH21G-2572, December, 2025

Niranjana, Klein, K. G., **Martinović M. M.**, Bowen, T. *Statistical Analysis of Ion-Scale Circularly Polarized Waves Abundantly Observed by PSP*, AGU Fall Meeting SH21A-03, December, 2025

Ofman, L., **Martinović M. M.** et al (8<sup>th</sup> of 9 authors) *Modeling Ion-Scale Waves and Kinetic Instabilities in Proton-Alpha Solar Wind Plasma Observed by Parker Solar Probe*, AGU Fall Meeting SH13G-2167, December, 2025

Afify, M., Klein, K. G., **Martinović M. M.**, Innocenti, M. E. *Electron impact on ion-scale electrostatic instability in the solar wind*, AGU Fall Meeting SH13G-VR8770, December, 2025

Klein, K. G., **Martinović M. M.** et al (5<sup>th</sup> of 10 authors) *Ion-Scale Wave Emission and Absorption from non-Maxwellian Velocity Distributions Measured by SWEAP/SPANi*, AGU Fall Meeting SH13G-2165, December, 2025

Yogesh, **Martinović M. M.** et al (4<sup>th</sup> of 8 authors) *Ion-Scale Wave Emission and Absorption from non-Maxwellian Velocity Distributions Measured by SWEAP/SPANi*, AGU Fall Meeting SH13G-2163, December, 2025

**Martinović M. M.** & 8 others *Low-Plasma- $\beta$  Temperature Anisotropy Constraint Driven by  $\alpha$ -Particle Drift*, SHINE Conference, June, 2025

Shankarappa, N., Klein, K. G., & **Martinović M. M.** *Estimating the dissipation of turbulence and waves via Landau and cyclotron resonances using PSP observations and improved cascade model*, AGU Fall Meeting SH11B-07, December, 2024

Ofman, L., **Martinović M. M.** et al (7<sup>th</sup> of 8 authors) *Temperature Anisotropy and Alpha Abundance Features of Alfvénic Slow Solar Wind Observed by Parker Solar Probe, Helios, and Wind Missions*, AGU Fall Meeting SH31F-2665, December, 2024

Liu, M., **Martinović M. M.** et al (16<sup>th</sup> of 16 authors) *Properties of photoelectrons emitted from antennas: implications on antenna and spacecraft floating potential for Parker Solar Probe*, AGU Fall Meeting SH31F-268, December, 2024

Huang, J., **Martinović M. M.** et al (6<sup>th</sup> of 20 authors) *Study of Ion Velocity Distributions and Kinetic Wave Activity Observed in the Acceleration Region of the Solar Wind by the Parker Solar Probe*, AGU Fall Meeting SH52A-02, December, 2024

Yogesh, **Martinović M. M.** et al (9<sup>th</sup> of 11 authors) *Investigation of the ion-cyclotron waves and proton beams during PSP encounter 17*, AGU Fall Meeting SH52A-03, December, 2024

**Martinović M. M.** & 8 others *Comprehensive Analysis of Spatio-temporal Plasma Emissions and Resonances (CASPER) CubeSat Mission Concept*, AGU Fall Meeting SH33D-2766, December, 2024

Verniero, J., **Martinović M. M.** et al (26<sup>th</sup> of 40 authors) *Kinetic complexities of the near-Sun heliospheric current sheet observed by Parker Solar Probe*, AGU Fall Meeting SH33C-2751, December, 2024

**Martinović M. M.** & Klein, K. G. *Rapid Plasma Instability Identification using the SAVIC (Stability Analysis Vitalizing Instability Classification) Python Package*, AGU Fall Meeting SH11G-08, December, 2023

Liu M., **Martinović M. M.** et al (11<sup>th</sup> of 18 authors) *Intercomparisons of Solar Wind Electron Temperature on Parker Solar Probe Using QTN and SPAN-E Measurements*, AGU Fall Meeting SH31D-3006, December, 2023

Sioulas N., **Martinović M. M.** et al (7<sup>th</sup> of 12 authors) *Higher-Order Analysis of Three-Dimensional Anisotropy in Alfvénic Turbulence*, AGU Fall Meeting SH43B-3152, December, 2023

van der Holst M., **Martinović M. M.** & Klein, K. G. *Temperature-Anisotropy-driven instabilities with the AWM solar wind model*, AGU Fall Meeting SH15C-1492, December, 2022

Afshari A., **Martinović M. M.** et al (5<sup>th</sup> of 9 authors) *Temperature-Anisotropy-driven instabilities with the AWM solar wind model*, AGU Fall Meeting SH22D-2021, December, 2022

Shankarappa N., Klein, K. G. & **Martinović M. M.** *Relative heating of ions and electrons in the young solar wind due to turbulent dissipation mediated by Landau damping*, AGU Fall Meeting SH22D-2030, December, 2022

Afshari A., **Martinović M. M.** et al (5<sup>th</sup> of 9 authors) *Direct Observation of Ion Cyclotron Damping of Turbulence in Earth's Magnetosheath Plasma*, APS Division of Plasma Physics Meeting YO07.00002, November, 2022

Liu M., **Martinović M. M.** et al (6<sup>th</sup> of 10 authors) *Radial Evolution of the Electron Temperature Derived from the Quasi-Thermal Noise Spectroscopy in the Pristine Solar Wind: Parker Solar Probe Observations*, 44th COSPAR Scientific Assembly, July, 2022

Huang M., **Martinović M. M.** et al (7<sup>th</sup> of 14 authors) *Parker Solar Probe Observations of High Plasma Beta Solar Wind from Streamer Belt*, AGU Fall Meeting SH42A-08, December, 2021

**Martinović M. M.**, Klein, K. G., Ďurovcová, T & Alterman, B. L. *Ion-Driven Instabilities in the Inner Heliosphere as Observed by Helios*, AGU Fall Meeting SH35C-2063, December, 2021

Shankarappa N., Klein, K. G. & **Martinović M. M.** *Modeling Proton and Electron Heating Rates in Early Parker Solar Probe Encounters*, AGU Fall Meeting SH35C-2084, December, 2021

Yoon M., **Martinović M. M.** et al (5<sup>th</sup> of 6 authors) *Effects of Radial Expansion, Collisions, and Wave-Particle Interactions on Protons, Electrons, and Alpha Particles in the Solar Wind*, AGU Fall Meeting SH42A-2073, December, 2021

Liu M., **Martinović M. M.** et al (6<sup>th</sup> of 10 authors) *Radial Evolution of the Electron Temperature Derived from the Quasi-Thermal Noise Spectroscopy in the Pristine Solar Wind: Parker Solar Probe Observations*, AGU Fall Meeting SH42A-2093, December, 2021

**Martinović M. M.** & 22 others *Multiscale Solar Wind Turbulence Properties inside and near Switchbacks measured by Parker Solar Probe*, EGU General Assembly EGU21-6686, April, 2022

**Martinović M. M.**, Klein, K. G., Ďurovcová, T & Alterman, B. L. *Ion-Driven Instabilities in the Inner Heliosphere as Observed by Helios*, APS Meeting TO06.003, November, 2021

Bourouaine M., **Martinović M. M.** et al (4<sup>th</sup> of 5 authors) *Turbulence Characteristics of Switchbacks and Non-switchbacks Intervals Observed by Parker Solar Probe*, AGU Fall Meeting SH029-0004, December, 2020

Wooley T., **Martinović M. M.** et al (12<sup>th</sup> of 13 authors) *Proton Core Behaviour inside Magnetic Field Switchbacks*, AGU Fall Meeting SH029-0004, December, 2020

Shankarappa N., **Martinović M. M.** et al (3<sup>rd</sup> of 11 authors) *Relative heating of ions and electrons in the young solar wind due to turbulent dissipation mediated via Landau damping*, AGU Fall Meeting SH016-0016, December, 2020

Huang J., **Martinović M. M.** et al (9<sup>th</sup> of 22 authors) *The Structure and Origin of Switchbacks: Parker Solar Probe Observations*, AGU Fall Meeting SH049-0021, December, 2020

**Martinović M. M.** & 8 others *Multiscale Solar Wind Turbulence Properties inside and near Switchbacks measured by Parker Solar Probe*, AGU Fall Meeting SH055-05, December, 2020

Vech D., **Martinović M. M.** & 26 others *Wave-particle energy transfer directly observed in an ion cyclotron wave*, AGU Fall Meeting SH052-05, December, 2020

Shankarappa N., **Martinović M. M.** et al (3<sup>rd</sup> of 6 authors) *The relative heating of ions and electrons due to turbulent dissipation through Landau damping*, APS Division of Plasma Physics Meeting VP16.007, November, 2020

**Martinović M. M.** & 7 others *On Stochastic Ion Heating in the Inner Heliosphere: Radial Trends and Parker Solar Probe Observations*, APS Division of Plasma Physics Meeting TO16.003, November, 2020

**Martinović M. M.** & 26 others *Stochastic heating of the solar wind becomes increasingly significant close to the Alfvén critical point*, AGU Fall Meeting SH13C-3448, December, 2019

Kasper J. C., **Martinović M. M.** et al (24<sup>th</sup> of 42 authors) *Young Solar Wind in the Grip of the Sun's Corona*, AGU Fall Meeting SH11A-02, December, 2019

Alterman B. L., **Martinović M. M.** et al (11<sup>th</sup> of 24 authors) *Observations of Non-Thermal Structure in the Proton Velocity Distribution Function Using Proton Beams Below 0.3 AU from Parker Solar Probe and at 1 AU with Wind*, AGU Fall Meeting SH43C-3381, December, 2019

Klein K. G., **Martinović M. M.** et al (14<sup>th</sup> of 18 authors) *The Prevalence of Ion-Scale Instabilities in the First Parker Solar Probe Encounters*, AGU Fall Meeting SH23A-03, December, 2019

**Martinović M. M.**, Klein, K. G. & Bourouaine, S. *Radial evolution of stochastic heating in low-beta solar wind*, SHINE Conference 16M, May, 2019

Klein K. G. & **Martinović M. M.** *The Ubiquity of Ion-Driven Microinstabilities in the Inner Heliosphere*, APS Division of Plasma Physics Meeting GO8.003, November, 2019

**Martinović M. M.** *Estimations of Kappa parameter using quasi-thermal noise spectroscopy: Applications on Wind spacecraft*, AGU Fall Meeting SH31C-2747, December, 2017

Jovanović B. H., Šegan, S. & **Martinović M. M.** *Optimal scale for civil timekeeping in the period 1962.0-2016.1*, IAU339 - Southern Horizons in Time-Domain Astronomy, November, 2017

**Martinović M. M.** *A study of quasi-thermal noise and shot noise in space plasmas*, Serbian Astronomical Conference 17-62, September, 2017

**Martinović M. M.** *Estimation of the quasi-thermal noise spectrum around the plasma frequency*, Serbian Conference of Spectral Line Shapes in Astrophysics 11-74, May, 2017

**Martinović M. M.**, Zaslavsky, A., Maksimović, M & Šegan, S. *Quasi-thermal noise in laboratory plasmas - testing the responses of various antenna shapes*, AGU Fall Meeting SH31B-2595, December, 2016

**Martinović M. M.**, Zaslavsky, A., Maksimović, M, Šegan, S. & Svetlik, M. *Quasi-thermal noise observed by CASSINI during the first flyby of Venus*, AGU Fall Meeting SH31C-2433, December, 2015

**Martinović M. M.**, Zaslavsky, A., Maksimović, M & Zouganelis, I. *Shot noise measured by an antenna in a plasma with suprathermal electron tails: Application to Solar Orbiter*, First joint PSP - SO Workshop, September, 2015

**Martinović M. M.**, Zaslavsky, A., Maksimović, M & Zouganelis, I. *Measurements of plasma quasi-thermal noise on STEREO spacecraft and plasma temperature deduction using antenna electron shot noise model*, AGU Fall Meeting SH21B-4125, December, 2014

Zouganelis, I., **Martinović M. M.** et al (8<sup>th</sup> of 8 authors) *Measurements of plasma quasi-thermal noise on STEREO spacecraft and plasma temperature deduction using antenna electron shot noise model*, AGU Fall Meeting SH21B-4106, December, 2014

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