

ZORAN MIKIĆ

EDUCATION

University of California, Berkeley: Ph. D., Nuclear Engineering, 1985.

University of California, Berkeley: M. S., Nuclear Engineering, 1980.

University of London, Queen Mary College: B. Sc., Nuclear Engineering, 1979.

EXPERIENCE

Dr. Mikić is a computational plasma physicist with experience in particle and magnetohydrodynamic (MHD) simulation of fusion and solar plasmas. His contributions in solar physics include large-scale MHD modeling of the solar corona, the eruption of coronal magnetic field arcades, coronal mass ejections, the three-dimensional structure of the solar corona, modeling of active-region coronal magnetic fields, coronal heating, and solar flares. Dr. Mikić is an accomplished numerical analyst, with interests in the implementation and development of implicit algorithms, and in the inversion of sparse matrices.

APPOINTMENTS

Chief Scientist and Vice President, Predictive Science, Inc., San Diego, 2008–present.

Senior Research Scientist, Advanced Engineering and Applied Sciences Division, Technology Research and Integration Business Unit, Science Applications International Corporation, San Diego, 1985–2008.

PROFESSIONAL SOCIETIES

American Physical Society (Plasma Physics Division).

American Astronomical Society (Solar Physics Division).

American Geophysical Union.

RECENT COLLABORATIONS

Graduate Thesis Advisor:

Prof. Edward C. Morse, University of California, Berkeley

Collaborators:

Dr. Jon A. Linker, Science Applications Intl. Corp., San Diego

Dr. Roberto Lionello, Science Applications Intl. Corp., San Diego

Dr. Pete Riley, Science Applications Intl. Corp., San Diego

Dr. Viacheslav Titov, Science Applications Intl. Corp., San Diego

Dr. Dalton D. Schnack, Science Applications Intl. Corp., San Diego

Dr. Yung Mok, University of California, Irvine

Dr. Tahar Amari, École Polytechnique, Paris, France

Dr. Samuel Vainshtein, University of Chicago

Dr. Dusan Odstreil, U. Colorado, Boulder and NOAA Space Environment Center

PUBLICATIONS

- Z. Mikić and E. C. Morse, "The Use of a Preconditioned Bi-Conjugate Gradient Method for Hybrid Plasma Stability Analysis," *J. Comput. Phys.*, **61**, 154 (1985).
- E. C. Morse and Z. Mikić, "Ray Tracing in the Compact Torus," *Fusion Technology*, **7**, 311 (1985).
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- Z. Mikić and E. C. Morse, "Linear Stability Analysis of Compact Toroidal Plasmas Using Particle Simulation," *Phys Fluids*, **30**, 2806 (1987).
- Z. Mikić, D. C. Barnes, and D. D. Schnack, "Dynamical Evolution of a Coronal Magnetic Field Arcade," *Astrophys. J.*, **328**, 830 (1988).
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- D. S. Harned and Z. Mikić, "Accurate Semi-Implicit Treatment of the Hall Effect in Magnetohydrodynamic Computations," *J. Comput. Phys.*, **83**, 1 (1989).
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- Z. Mikić, D. D. Schnack, and G. Van Hoven, "Dynamical Evolution of Twisted Magnetic Flux Tubes: I. Equilibrium and Linear Stability," *Astrophys. J.*, **361**, 690 (1990).
- D. D. Schnack, Z. Mikić, D. C. Barnes, and G. Van Hoven, "Magnetohydrodynamic Simulation of Coronal Magnetic Fields," *Comput. Phys. Comm.*, **59**, 21 (1990).
- A. N. McClymont and Z. Mikić, "Thickness Variations along Coronal Loops Inferred from Vector Magnetograph Data," *Astrophys. J.*, **422**, 899 (1994).
- Z. Mikić and J. A. Linker, "Disruption of Coronal Magnetic Field Arcades," *Astrophys. J.*, **430**, 898 (1994).
- Z. Mikić and A. N. McClymont, "Deducing Coronal Magnetic Fields from Vector Magnetograms," in *Solar Active Region Evolution: Comparing Models with Observations* (K. S. Balasubramaniam and G. W. Simon, eds.), Astronomical Society of the Pacific Conference Series, Vol. **68**, p. 225 (1994).

- D. D. Schnack and Z. Mikić, "Current Filaments Induced in a Resistive Corona by Continuous Footpoint Motions," in *Solar Active Region Evolution: Comparing Models with Observations* (K. S. Balasubramaniam and G. W. Simon, eds.), Astronomical Society of the Pacific Conference Series, Vol. **68**, p. 180 (1994).
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- J. A. Linker and Z. Mikić, "Disruption of a Helmet Streamer by Photospheric Shear," *Astrophys. J. Letters*, **438**, L45 (1995).
- G. Van Hoven, Y. Mok, and Z. Mikić, "Coronal Loop Formation Resulting from Photospheric Convection," *Astrophys. J. Letters*, **440**, L105 (1995).
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