Dr Romana E. Ratkiewicz, Associate Professor

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CURRICULUM VITAE

Born: January 25, 1942, Warsaw, Poland

Hobbies: theology, theater, music, dancing, gliding

Languages: Polish, English, Russian, German

EDUCATION:

Master degree in mathematics at the Warsaw University, 1966

Ph. D in technical sciences at the Warsaw Technical University, 1977

Habilitation in technical sciences at the Institute of Essential Problems of Technics of the Polish Academy of Sciences, 1992

Certificate in theology at the Papal Theological Faculty in Warsaw, 1992

1992 October - Associate Professor

POSITION HELD:

1. Hydro-Meteorological State Institute 1965 - 1967

Student - Assistant

2. Warsaw University 1967 - 1969

Assistant in Faculty of Mathematics and Physics

3. Warsaw Technical Unversity 1969 - 1977

Senior Assistant in Mechanical Faculty of Energetics and Aviation

(1970-1973) PhD Studies

4. Space Research Center, Polish Academy of Sciences

1977 - 1992 Assistant Professor

1992 - Present Associate Professor

SCIENTIFIC VISITS:

Space Research Institute, Moscow, Soviet Union, 1 month, 1981

Bonn University, Bonn, Germany, 4 months, scholarship, 1984

Bonn University, Bonn, Germany, several visits in the frame of DFG - PAS cooperation, 1985 - 1992

Max-Planck-Institut für Aeronomie, Katlenburg-Lindau, Germany, 3 years in the period 1987 - 1993, scholarship

Max-Planck-Institut für Aeronomie, Katlenburg-Lindau, Germany, several visits in the frame of MPAE - SRC cooperation, 1997 - 2002

NASA Ames Research Center, Moffett Field, California, USA, 2 years and 3 months, 1994 August - 1996 October, NRC award

NASA Ames Research Center, Moffett Field, California, USA, several visits, invitations, 1997 - 1999

Institute of Astrophysics in Paris, Paris, France, several visits in the frame of CNRS - PAS cooperation and other programs, 1998 - 2011

Bartol Research Institute, University of Delaware, Newark, Delaware, USA, 1 month, invitation, 2000

Institute of Geophysics and Planetary Physics, University of California, Riverside, California, USA, 1 month invitation 2002, 2 months invitation 2003, 3 months invitation 2004, 2005, 2006, 2007

Institut fur Astrophysik und Extraterrestrische Forschung, Universitat Bonn, Bonn, Germany, 3 weeks 2003, 3 weeks 2004, 2 weeks 2005

AWARDS:

Heinrich - Hertz - Stiftung, Bonn University, 4 months, 1984

Max Planck Society Stipendium, Katlenburg-Lindau, 3 years, between 1987 and 1993

National Research Council Award, NASA Ames Research Center, 2 years and 3 months, 1994 - 1996

State Award ”Krzyz Oficerski Orderu Odrodzenia Polski” (Officer’s Cross of the Order of Polonia Restituta) by the President of Poland for scientific achievements, November, 2001

MEMBERSHIP IN INTERNATIONAL SCIENTIFIC SOCIETIES:

COSPAR (since 1986)

American Geophysical Union (since 1994)

OTHER SCIENTIFIC ACTIVITIES:

Supervisor of two PhD thesis (in preparation)

Deputy Chairman of the conference Physics of the Outer Heliosphere, Jachranka, Poland, August, 1989

Member of the Scientific Council of the Space Research Center (1992 - Present)

Chairperson at sessions of several international conferences

Convener of the session: Magnetic Fields at the COSPAR Colloquium Conference: The Outer Heliosphere: The Next Frontier, Potsdam, Germany, July 23 - 28, 2000

Project Head of 3 Projects Grants of the State Scientific Research Committee (KBN) and Polish Ministry of Science and Higher Education (MNiSW), 1995-1997, 1998-2000, 2007-2010 and participant of 3 others 1993-1995, 2001-2003, 2004-2007

Spokesperson for COSPAR 2000 appointed by the COSPAR President, Warsaw, Poland, July 16 - 23, 2000

Several press, radio, and TV interviews; press conferences; popular lectures in heliospheric physics

Referee of several scientific papers, Ph. D thesis, habilitation thesis, international and national grants (projects)

TEACHING and DIDACTIC

1967 - 1969: mathematics - calculus, analytical geometry, algebra, differential geometry, differential equations

(exercises for students in Faculty of Mathematics and Physics, Warsaw University)

1969 - 1973: mathematics - calculus, analytical geometry, algebra, differential geometry, differential equations

(exercises and lectures for students in Mechanical Faculty of Energetics and Aviation, Warsaw Technical University)

2008, 2010, 2011 2nd semester: mathematics-partial differential equations (lectures at the PhD Studium at the Space Research Centre PAS)

INFORMATION ON RESEARCH WORK

Research Interests

- **Global interaction between the solar wind and the interstellar medium**
- **Motion of the heliospheric termination shock**
- **Magnetohydrodynamic stationary and time-dependent models of the heliosphere in the presence of the magnetic fields and neutral particles**
- **Similarity solutions for synchrotron emission in a supernova blast wave**
- **Multi-dimensional simple waves in gasdynamics and magnetohydrodynamics**
- **Multi-ion solar wind**

Main scientific results:

Magnetohydrodynamic models of the interaction between the solar wind (SW) and the local interstellar medium (LISM) - a discovery of the asymmetry and tilt of the heliosphere due to the oblique (to the LISM velocity) interstellar magnetic field.

54 papers published in international journals, participation in more than 30 international conferences with contributed or invited papers