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Martin Friedrich was born in Graz in 1945. In 1963 he enrolled at Graz University of Technology in the field of electrical engineering graduating with a Dipl.-Ing. in 1969; in the same year he was employed at the then newly established Department of Communications and Wave Propagation. He obtained the PhD in 1974 and the habilitation (professorial qualification) in 1985. Since October 2010 he is formally retired, but still participates in several sounding rockets.

Employment

Graz University of Technology

Institute of Communication Networks and Satellite Communications (4400)
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15 Jan 1985 → present

Research output

Sounding rocket project "PMWE" for investigation of polar mesosphere winter echoes

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Turbulence generated small-scale structures as PMWE formation mechanism: Results from a rocket campaign

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Simultaneous in situ Measurements of Small-Scale Structures in Neutral, Plasma, and Atomic Oxygen Densities During the WADIS Sounding Rocket Project

Strelnikov, B., Eberhart, M., Friedrich, M., Hedin, J., Khaplanov, M., Baumgarten, G., Williams, B. P., Staszak, T., Asmus, H., Strelnikova, I., Latteck, R., Grygalashvili, M., Lübken, F.-J., Höffner, J., Wörl, R., Gumbel, J., Löhle, S., Fasoulas, S., Rapp, M., Barjatya, A., & 2 others Taylor, M. J. & Pautet, P.-D., 2019, In: Atmospheric Chemistry and Physics. 19, p. 11443-11460

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FIRI-2018, an Updated Empirical Model of the Lower Ionosphere

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Long-Term Trends in the D- and E-Region Based on Rocket-Borne Measurements

Friedrich, M., Torkar, K. & Pock, C., 2017, In: *Journal of Atmospheric and Solar-Terrestrial Physics* . 163, p. 78-84

Spatial and Temporal Variability of MLT Turbulence Inferred from in-situ and Ground Based Observations during WADIS-1 Sounding Rocket Campaign

Strelnikov, B., Szewczyk, A., Strelnikova, I., Latteck, R., Baumgarten, G., Lübken, F-J., Rapp, M., Fasoulas, S., Löhle, S., Eberhart, M., Hoppe, U-P., Dunker, T., Friedrich, M., Hedin, J., Khaplanov, M., Gumbel, J. & Barjatya, A., 2017, In: *Annales Geophysicae*. 35, 3, p. 547-565

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Time Constants in the Ionosphere from Neural Network Models

Friedrich, M. & Fankhauser, M., 2013, In: *Advances in Space Research*. 51, p. 691-695

Electron Loss and Meteoric Dust in the Mesosphere

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Observations of Meteor Smoke Particles (MSP) During the Geminids 2010: Constraints on MSP Size, Work Function, and Composition

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In Situ Studies of Meteor Smoke Particles in the Middle Atmosphere During the ECOMA Rocket Campaigns

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Activities

2016 AGU Fall Meeting

Martin Friedrich (Contributor)
16 Dec 2016

13th International Workshop on Layered Phenomena in the Mesopause Region (LPMR)

Martin Friedrich (Speaker)
19 Sep 2016 → 23 Sep 2016

Copernicus Publications (Publisher)

Martin Friedrich (Peer reviewer)
2016

Elsevier Limited (Publisher)

Martin Friedrich (Peer reviewer)
2016

UNOOSA Symposium

Martin Friedrich (Speaker)
18 Sep 2012 → 21 Sep 2012

Evaluation Meeting, von Karmann Institute

Martin Friedrich (Speaker)
30 Aug 2012

Norge 50 ar i verdensrommet

Martin Friedrich (Speaker)
16 Aug 2012 → 17 Aug 2012

Powertalk, ITC

Martin Friedrich (Speaker)
12 Apr 2012

LPMR (Layered Phenomena in the Mesopause Region)

Martin Friedrich (Speaker)
14 Jul 2009

Seminar, HMO (Hermanus Magnetic Observatory)

Martin Friedrich (Speaker)
5 Mar 2008

Seminar, IPG (Instituto Peruviano Geofisico)

Martin Friedrich (Speaker)
25 Oct 2006

Seminar Radio Observatory

Martin Friedrich (Speaker)
24 Oct 2006

Buenos Aires (Argentinien)

Martin Friedrich (Visitor)
15 Oct 2006 → 25 Oct 2006

COSPAR, Paris (Frankreich) (External organisation)

Martin Friedrich (Chair)
7 Sep 2006 → 6 Sep 2010

Beijing (China)

Martin Friedrich (Visitor)
15 Jul 2006 → 24 Jul 2006

Andenes

Martin Friedrich (Visitor)
22 Jun 2006 → 3 Jul 2006

Sandefjord

Martin Friedrich (Visitor)
30 May 2005 → 3 Jun 2005

Andenes

Martin Friedrich (Visitor)
15 Jan 2005 → 22 Jan 2005

Projects**Active Plasma Experiments**

Friedrich, M.
1/01/86 → 31/01/91

FWF - Dust and Oxygen - New Players in the Mesosphere: Dust and Atomic Oxygen

Koudelka, O. F. S. & Friedrich, M.
1/07/14 → 30/06/18

FWF - ECOMA - Existence and Charge State of Meteoric Dust Grains in the Middle Atmosphere

Friedrich, M.
7/11/05 → 7/11/08

FWF - Elektronenverlust Mesosphäre - Electron Scavenging in the Mesosphere

Friedrich, M.
15/01/11 → 14/01/16

FWF - PHOCUS - Particle, Hydrogen and Oxygen Chemistry in the Upper Summer mesosphere

Friedrich, M.
1/06/10 → 31/05/12

Gravity Wave Forcing : Mountain Waves (McWave)

Friedrich, M.
6/05/02 → 30/09/04

Gravity Waves and Ionisation (MIP-MAG)

Friedrich, M.
29/01/01 → 12/11/02

Layers in the Equatorial Mesosphere (LEMMA)

Friedrich, M.
15/02/03 → 31/01/05

Upper Atmosphere Research

Friedrich, M. & Valavanoglou, N.
1/11/69 → 31/10/20