

## **Curriculum vitae, summary of earlier activities and list of publications:**

### Personal data

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### **Present position**

Works in my own company, Rymdorg, which aims to spread knowledge about space science to interested.

### **Earlier positions**

- 85-89 Postgraduate appointment at the Institute of Plasma Physics, Royal Institute of Technology, RIT, in Stockholm
- 89-90 Research assistant the Institute of Plasma Physics at RIT, Stockholm.
- 90-91 Assistant at the Institute of Plasma Physics and the Department of Electromagnetic Theory at RIT, Stockholm.
- 92 Post Doctor at Centre National de la Recherche Scientifique (CNRS) in Paris, France.
- 93-94 Post Doctor at the Mathematical Institute University of St Andrews, Scotland.
- 94-95 Research assistant at the Institute of Plasma Physics at RIT, Stockholm.
- 96-06 Lecturer at Umeå University shared with a 50% research position at the Institute of Space Physics 96-02
- 07-10 Lecturer at Luleå University of Technology,
- 2011 Lecturing in math at the Royal Institute of Technology

### **Academical career**

- 80 Bachelor of Arts in physics and mathematics at the university of Stockholm.
- 83 Exam from the Practical pedagogical education in the area of mathematics and physics.
- 91 Doctor degree in Plasma Physics at the Institute of Plasma Physics, RIT, Stockholm

### **PhD-exam**

I graduated in September 1991 at the Institute of Plasmaphysics, Royal Institute of Technology, in Stockholm. The title of my thesis is: Studies of Anomalous Potential Drops in Plasmas due to Ion Density Inhomogeneities and treat both laboratory experiments and numerical simulations. My supervisor was professor Staffan Torvén. The aim of the research intend to clarify some of the various physical processes that can explain the voltage supporting capability of a collisionless plasma. Two new types of anomalous potential drops, caused by ion density inhomogeneities, are presented in the thesis.

## Research Interest (in keywords)

Anomalous resistivity in plasmas, computer simulations, plasma in space, solar physics

## List of Publications :

1. Bohm, M., Torvén, S., Extended potential drops preceding double layer formation in a triple plasma device, TRITA-EPP-86-11 (internal report).
2. Bohm, M., Torvén, S., Electric fields along the magnetic field in a collisionfree laboratory plasma, Contributed paper 1987 International Conference on Plasma Physics, Kiev, Sovjet, 6-12 April 1987.
3. Bohm, M., Torvén, S., Extended potential drops preceding double layer formation in a triple plasma device, Poster Contributed Paper, Proc. of the Third Symposium on Plasma Double Layers, Bukarest, Romania, 14-15 April 1987, p. 105-109.
4. Bohm, M., Torvén, S., Extended potential drops preceding double layer formation in a triple plasma device, XVIII Int. Conf. on Phenomena in Ionized Gases, Swansea, Contributed Papers, Vol. 2, p. 318 - 319, 1987. (Bristol: The Inst. of Physics Publishing Div.).
5. Brenning, N., Bohm, M., Fälthammar, C.-G., (1990), Dynamic trapping of electrons in space plasmas, TRITA-EPP-89-07.
6. Bohm, M., Brenning, N., Fälthammar, C.-G., (1990), Dynamic trapping of electrons in the Porcupine Ionospheric ion beam experiment, TRITA-EPP-90-06.
7. Bohm, M., Brenning, N., Fälthammar, C.-G., (1990), Dynamic trapping: Neutralization of positive space charge in a collisionless magnetized plasma, Physical Review Letters, Vol. 65 no. 7, 13 Aug. 1990.
8. Bohm, M., Torvén, S., Potential Drops Supported by Ion Density Cavities in the Dynamic Response of a plasma Diode to an Applied Field, TRITA-EPP-90-03.
9. Bohm, M., Experimental Observations of Anomalous Potential Drops over Ion Density Cavities, TRITA-EPP-91-04
10. Bohm, M., Brenning, N., Fälthammar, C.-G., Dynamic Trapping of electrons in the Porcupine Ionospheric Ion Beam experiment, Advances in Space Research, Vol. 12, nO. 12, P. 9 - 14, 1992
11. Bohm, M., Torvén, S., Potential Drops Supported by Ion Density Cavities in the Dynamic Response of a Plasma Diode to an Applied Field, Physical Review Letters, Vol. 66 no. 5, 4 Feb. 1991
12. Bohm, M., Torvén, S., The Dynamic Response of an Inhomogeneous Plasma Diode to an Applied Electric Field, TRITA-EPP-90-05.
13. Bohm, M., Torvén, S., Potential Drops Supported by Ion Density Cavities in the Dynamic Response of a Plasma Diode to an Applied Step Voltage, Poster Contributed Paper, The 4th International School for Space Simulation March 25-April 6, 1991 Kyoto and Nara, Japan. Proceedings of 2nd Week Symposium, p. 102 - 105.
14. Fälthammar, C.-G., Bohm, M., Brenning, N., Magnetic-Field Aligned Electric Fields Supported by Electron Inertia, Poster Contributed Paper, The 4th International School for Space Simulation March 25-April 6, 1991 Kyoto and Nara, Japan. Proceedings of 2nd Week Symposium, p. 126 - 128.
15. Brenning, N., Fälthammar, C.-G., Bohm, M. An extension of the boltzmann relation to the collisionless magnetized plasma, TRITA-EPP-90-08.
16. Bohm, M., Bonander, K., En övre gräns för litiumhalten i stjärnan Regulus B (Un upper limit of the lithium content in the star Regulus B), Local Report No 5, The Astronomical Department, University of Stockholm, Oct. 1979
17. Bohm, M. Studies of Anomalous Potential Drops in Plasmas due to Ion Density Inhomogeneities, dissertation, Kungl. Tekniska Högskolan, Royal Institute of Technology, Stockholm, Sep. 1991

18. Axnäs, I., Bohm, M., Torvén, S. Experimental Studies of Anomalous Potential Drops due to Ion Density Inhomogeneities, in Proc. 1992, p. 1875 - 1878, Poster Contributed Paper, International Conference on Plasma Physics, Innsbruck, 29 June - 3 July 1992, Proc. 16C, p. 1875 - 1878, 1992.
19. Torvén, S., Bohm, M., Axnäs, I. The Dynamic Response of a Collisionless Plasma to the Application of a Potential Drop, in Proc. 4th Symp. on Double Layers and other Nonlinear Potential Structures in Plasmas, publicerat i Double Layers and other Nonlinear Potential Structures in Plasmas, Ed. R.W. Schrittwieser, World Scientific, London, s. 150 - 161, 1993.
20. Bohm, M., Torvén, S. The Dynamic Response of an Inhomogeneous Plasma Diode to an Applied Potential Drop, IEEE Trans. Plasma Sci. Vol. 20, no 5, Oct, 1992
21. Bohm, M., Report of my work with AVS under the period Feb.-Dec. 1992
22. Bohm, M., Torvén, S., Studies of Anomalous Potential Drops due to Ion Density Inhomogeneities, Poster Contributed Paper, Fragmented Energy Release in Sun and Stars 18-21 Oct. 1993, Utrecht University, Nederländerna. Published in Space Science Reviews, Vol. 68, p. 131-132, 1994.
23. Gubchenko, V., Bohm, M., On Kinetic Description of Magnetic Reconnection, poster presentation, RAS/EAS European and National Astronomy Meeting, Edinburgh, Scotland 5-8 April 1994
24. Bohm, M. A users guide for the code XPDP1, version 3.1 and the modified version MODXPDP1. To be run on HP workstation 712/80 with HP-UX version 09.03 and a digital VXT 2000+ terminal., internal publication ALP-1995-103, Department of Plasmaphysics, RIT, April 1995
25. Wendt, M., Bohm, M., Torvén, S., Current Limitation and Inertial Resistance of an Inhomogeneous Plasma Diode, Physica Scripta, Vol. 64, No 4, p 372, Oct., 2001
26. Bohm, M., Space Science in Norrbotten, poster bidrag, Astronomdagarna I Uppsala 21-23 okt. 2005
27. Malik, A., Bohm, M., A statistical Analysis of Sunspot Active Longitudes, astro-ph, arXiv. org, Cornell University Library, 16 sep. 2009
28. Malik, A., Bohm, M., A statistical Analysis of Sunspot Active Longitudes, Submitted to Astronomy & Astrophysics nov. 2009

#### Lectures

1. Bohm, M., En kort presentation om bildning av ett dubbelskikt (A short presentation about the creation of a double layer), The 21. Nordic Plasma and Gas Discharge Symposium, Gausdal, Norge, Februar, 1986
2. Bohm, M., Experimental Studies of double layers, The 13. annual conference on plasma physics, Oxford, England, July, 1986.
3. Bohm, M., Experimental studies of double layers, The 22. Nordic Plasma and Gas Discharge Symposium, Gausdal, Norge, February, 1987.
4. Bohm, M., ES1 - ett endimensionellt elektrostatiskt program fr numerisk simulering av plasma (ES1 - a one dimensional electrostatic code for numerical simulations of a plasma), The Institute of Plasmaphysics, Royal Institute of Technology, Sweden, 19 Nov, 1987
5. Bohm, M., Experimental studies and numerical simulations of electric double layers in Plasma. The 23. Nordic Plasma and Gas Discharge Symposium, Gausdal, Norge, 21-24 February, 1988.
6. Bohm, M., Computer simulation of strong magnetic field aligned electric fields maintained by dynamic trapping of electrons, The 25. Nordic Plasma and Gas Discharge Symposium, Gausdal, Norge, February 18-21, 1990.
7. Bohm, M., Dynamic Trapping: Computer Simulation of Strong Magnetic Field -Aligned Electric Fields in a Collisionless Plasma, The 28th COSPAR Plenary Meeting, The Hague, The Netherlands, 4 July, 1990.

8. Fälthammar, C-G., Bohm, M., Brenning, N., A New Mechanism for Parallel Electric Fields in Space and Laboratory Plasmas, IEEE International Conference on Plasma Physics, Williamsburg, VA, USA, 3 June, 1991 (invited lecture).
9. Bohm, M., 3D visualization software, European Simulation Network meeting QMW College London, 4 - 6 Nov., 1992.
10. Gubchenko, V., Bohm, M. On Kinetic Modelling of Magnetic Reconnection in Coronal Plasma, The sixth Russian-Finnish Symposium on Radio Astronomy, Nizhnii Novgorod, Ryssland, 13-17 September 1994 (conference proceeding).
11. Bohm, M., Double Layers and Other Anomalous Potential Drops, June 1997, The Institute of Space Physics, Kiruna, Sweden.
12. Bohm, M., Numerical simulations of plasma May 1998, The Institute of Space Physics, Kiruna, Sweden.
13. Bohm, M., Dynamical Trapping, Feb. 2000, The Institute of Space Physics, Kiruna, Sweden.
14. Bohm, M., Inertial Resistivity and Current Limitation in a Collisionfree and Inhomogeneous Plasma, May 2001, The Institute of Space Physics, Kiruna, Sweden.
15. Bohm, M., Rymdutbildningar i Kiruna, NSCF, Nordiska Science Center Förbundets konferens i Stockholm,, 6-8 dec. 2006.