

List of publications in the area of previous research activities
of
Ekkehard Boggasch

I. Contributions in Refereed Journals

1. F. Dothan, **E. Boggasch**, K. Frank, H. Riege,
Dynamics of a z pinch for focusing high-energy charged particles,
J. Appl. Phys. **62**, 3585 (1987)
2. **E. Boggasch**, R. Grüb,
Differentiating measuring coils for pulsed currents in the MA-MHz-range,
Rev. Sci. Instrum. **58**, 1382 (1987)
3. B. Autin, H. Riege, **E. Boggasch**, K. Frank, L. DeMenna, G. Miano,
A plasma lens for focusing high energy particles in an accelerator,
IEEE Trans. Plasma Sci. PS-15, 226 (1987)
4. K. Frank, **E. Boggasch**, J. Christiansen, A. Görtler, W. Hartmann, C. Kozlik, G. Kirkman, C. Braun,
V. Dominic, M.A. Gundersen, H. Riege, G. Mechttersheimer,
High-Power Pseudospark and BLT Switches,
IEEE Trans. Plasma Sci., vol. 16, 317 (1988)
5. H. Riege, **E. Boggasch**,
High-Power, High-Current Pseudospark Switches,
IEEE Trans. Plasma Sci., vol. 17, 775 (1989)
6. **E. Boggasch**, M.-J. Rhee,
High-brightness pseudospark-produced electron beam,
Appl. Phys. Lett. **56**, 1746 (1990)
7. K.K. Jain, **E. Boggasch**, M. Reiser, M.J. Rhee,
Experimental investigation of a pseudospark-produced high-brightness electron beam,
Phys. Fluids **B 2**, 2487 (1990)
8. K.-G. Dietrich, K. Mahrt-Olt, J. Jacoby, **E. Boggasch**, M. Winkler, B. Heimrich, D.H.H. Hoffmann,
Beam-plasma interaction experiments with heavy-ion beams,
Laser Part. Beams **8**, 583 (1990)
9. J.G. Wang, **E. Boggasch**, P. Haldeman, D. Kehne, M. Reiser, T. Shea, D.X. Wang,
Performance Characteristics of a Variable-Perveance Gridded Electron Gun,
IEEE Trans. Electron Devices, ED-37, 2622 (1990)
10. J.G. Wang D.X. Wang, **E. Boggasch**, D. Kehne, M. Reiser, T. Shea,
Design and performance characteristics of a compact induction accelerator module for longitudinal pulse compression experiment,
Nucl. Instrum. Methods Phys. Res., **A301**, 19 (1991)
11. M. Elfers, C.R. Haas, **E. Boggasch**, K.-G. Dietrich, D.H.H. Hoffmann, R. Noll, H. Kunze,
G. Hertziger,
Z-pinch used as a plasma lens for heavy ion beams,
Z. Phys. D **18**, 207 (1991)
12. **E. Boggasch**, J. Jacoby, H. Wahl, K.-G. Dietrich, D.H.H. Hoffmann, W. Laux, M. Elfers, C.R. Haas,
V.P. Dubenkov, A.A. Golubev,
z-Pinch Plasma Lens Focusing of a Heavy-Ion Beam,
Phys. Rev. Lett. **66**, 1705 (1991)

13. D.H.H. Hoffmann, K.-G. Dietrich, W. Laux, **E. Boggasch**, K. Mahrt-Olt, H. Wahl, A.A. Golubev, V.P. Dubenkov,
Interaction of heavy-ions with hot ionized matter,
Suppl. Z. Phys. **D 21**, 105 (1991)
14. **E. Boggasch**, J. Jacoby, A. Tauschwitz, H. Wahl, K.-G. Dietrich, D.H.H. Hoffmann, W. Laux, M. Elfers, C.R. Haas, V.P. Dubenkov, A.A. Golubev,
Plasma Lenses for Heavy-Ion Beam Focusing,
Part. Acc. **37-38**, 89 (1991)
15. D.H.H. Hoffmann, K.-G. Dietrich, W. Laux, **E. Boggasch**, J. Jacoby, K. Mahrt-Olt, A. Tauschwitz, B. Heimrich, M. Winkler, P. Spiller,
Intense Beam Target Interaction Experiments with Heavy Ions,
Part. Acc. **37-38**, 371 (1991)
16. **E. Boggasch**, J. Christiansen, K. Frank, R. Tkotz, H. Riege,
Z-Pinch Current Enhancement by the Inverse Skin Effect,
IEEE Trans. Plasma Sci. **19**, 866 (1991)
17. **E. Boggasch**, A. Tauschwitz, H. Wahl, K.-G. Dietrich, D.H.H. Hoffmann, W. Laux, M. Stetter, R. Tkotz,
Plasma Lens Fine Focusing of Heavy-Ion Beams
Appl. Phys. Lett. **60**, 2475 (1992)
18. **E. Boggasch**, D.H.H. Hoffmann, H. Riege,
Fokussierung von Teilchenstrahlen mit Plasmalinsen,
Physik in unserer Zeit **23**, 272 (1992)
19. K.-G. Dietrich, D.H.H. Hoffmann, **E. Boggasch**, J. Jacoby, H. Wahl, M. Elfers, C.R. Haas, V.P. Dubenkov, A.A. Golubev,
Charge State of Fast Heavy Ions in a Hydrogen Plasma,
Phys. Rev. Lett. **69**, 3623 (1992)
20. D.H.H. Hoffmann, P. Amatulli, **E. Boggasch**, M. Chabot, K.-G. Dietrich, B. Heimrich, W. Laux, P. Spiller, A. Tauschwitz, J. Jacoby, S. Miyamoto,
Interaction of Heavy Ions with Plasma,
Radiation Effects and Defects in Solids **126**, 345 (1993)
21. **E. Boggasch**, B. Heimrich, D.H.H. Hoffmann,
Focusing Behaviour of Plasma Lenses Compared to Conventional Quadrupole Systems,
Nucl. Instrum. Methods Phys. Res., **A 336**, 438 (1993)
22. M. de Magistris, D.H.H. Hoffmann, **E. Boggasch**, A. Tauschwitz,
Shape Optimization of a Wall-Stabilized Plasma Lens,
Il Nuovo Cimento Vol. 106A, N. 11, 1643 (1993)
23. M. Stetter, J. Christiansen, U. Neuner, S. Stöwe, R. Tkotz, T. Wagner, **E. Boggasch**, A. Tauschwitz, D.H.H. Hoffmann, P. Spiller,
Development of a Plasma Lens as a Fine Focusing Lens for Heavy Ion Beams,
Il Nuovo Cimento Vol. 106A, N. 11, 1725 (1993)
24. A. Tauschwitz, **E. Boggasch**, D.H.H. Hoffmann, M. de Magistris, U. Neuner, M. Stetter, R. Tkotz, T. Wagner, W. Seelig, H. Wetzler,
The Plasma Lens Solution for Heavy-Ion Beam Focusing,
Il Nuovo Cimento Vol. 106A, N. 11, 1733 (1993)
25. H. Wetzler, W. Seelig, **E. Boggasch**, D.H.H. Hoffmann, A. Tauschwitz,
Diagnostics Methods for Beam-Plasma Experiments,
Il Nuovo Cimento Vol. 106A, N. 11, 1851 (1993)

26. D.H.H. Hoffmann, J. Jacoby, W. Laux, M. de Magistris, **E. Boggasch**, P. Spiller, C. Stöckl, A. Tauschwitz, K. Weyrich, M. Chabot, D. Gardes, *Energy Loss of Fast Heavy Ions in Plasmas*, Nucl. Instrum. Methods Phys. Res., **B 90**, 1 (1994)
27. J. Jacoby, D.H.H. Hoffmann, W. Laux, R.W. Müller, H. Wahl, K. Weyrich, **E. Boggasch**, B. Heimrich, C. Stöckl, H. Wetzler, *Stopping of Heavy Ions in a Hydrogen Plasma*, Phys. Rev. Lett. **74**, 1550 (1995)
28. A. Tauschwitz, **E. Boggasch**, D.H.H. Hoffmann, J. Jacoby, U. Neuner, M. Stetter, S. Stöwe, R. Tkotz, M. De Magistris, W. Seelig *Heavy-Ion Beam Focusing with a Wall-Stabilized Plasma Lens*, Laser Part. Beams **13**, 221 (1995)
29. A. Tauschwitz, M. de Magistris, **E. Boggasch**, W. Laux, M. Dornik, H. Wetzler, D.H.H. Hoffmann, *Improvement of the Active Cylindrical Plasma Lens Concept by a Tapered Discharge Geometry*, IEEE Trans. Plasma Sci., vol. 23, 388 (1995)
30. R. Kowalewicz, **E. Boggasch**, D.H.H. Hoffmann, J. Jacoby, W. Laux, S. Miyamoto, C. Stöckl, K. Weyrich, *Enhanced Energy Loss of Heavy Ions Passing a Fully Ionized Hydrogen Plasma*, Laser Part. Beams **14**, 599 (1996)

II. Articles in Refereed Conference Proceedings

1. **E. Boggasch**, V. Brückner, J. Christiansen, K. Frank, W. Hartmann, C. Schultheiß, *Development of a gas-filled ion diode*, Proc. of the 5th Int. Conf. on High Power Particle Beams, 208, San Francisco, 1983
2. B. Autin, **E. Boggasch**, L. DeMenna, K. Frank, G. Miano, H. Riege, *Plasma lens for the CERN antiproton source*, Proc. of the 4th National Congress of Quantum Electronics and Plasma Physics, Capri, 1984
3. **E. Boggasch**, H. Riege, *The triggering of high current pseudo-spark switches*, Proc. of XVII Int. Conf. on Phenomena in Ionized Gases, Vol. 2, I-10, 567, Budapest, 1985
4. W. Benker, **E. Boggasch**, V. Brückner, J. Christiansen, W. Dümmler, K. Frank, W. Hartmann, N. Lieser, W. Rath, C. Schultheiß, W. Steudtner, A. Tinschmann, *Investigations and applications of the pseudo-spark discharge*, Proc. of XVII Int. Conf. on Phenomena in Ionized Gases, Vol. 2, I-6, 555, Budapest, 1985
5. **E. Boggasch**, V. Brückner, H. Riege, *A 400 kA pulse generator with pseudo-spark switches*, Proc. 5th Pulsed Power Conference, 820, Arlington, 1985
6. K. Frank, **E. Boggasch**, J. Christiansen, A. Goertler, W. Hartmann, C. Kozlik, *High repetition rate pseudo-spark switches for laser applications*; Proc. of SPIE - The International Society for Optical Engineering 735, 74, Los Angeles CA, 1987
7. K. Frank, **E. Boggasch**, C. Braun, J. Christiansen, V. Dominic, A. Görtler, M.A. Gundersen, W. Hartmann, G. Kirkman, C. Kozlik, H. Riege, *High Power Hollow Electrode Thyatron-Type Switches*, presented at the 6th IEEE Pulsed Power Conference, Washington DC, 1987
8. B. Autin, H. Gundel, H. Riege, H. Bauer, **E. Boggasch**, J. Christiansen, K. Frank, R. Tkotz, L. DeMenna, G. Miano, F. Dothan, *A z-Pinch Plasma Lens for Focusing High-Energy Particles in an Accelerator*, Proc. of the European Particle Accelerator Conference, Vol. 2, 1346, Rome, 1988

9. H. Riege, **E. Boggasch**,
High-Power, High-Current Pseudospark Switches,
Proc. of the XIIIth International Symposium on Discharges and Electrical Insulation in Vacuum,
Vol. 2, 393, Paris, 1988
10. **E. Boggasch**, T. Fine, M.J. Rhee,
The Pseudospark as an Electron Beam Source,
Proc. of the 1989 Particle Accelerator Conference, Vol. 1, 316, Chicago IL, 1989
11. T. Shea, **E. Boggasch**, M. Reiser,
The University of Maryland Electron Pulse Compression Experiment,
Proc. of the 1989 Particle Accelerator Conference, Vol. 2, 1049, Chicago IL, 1989
12. T.A. Fine, **E. Boggasch**, M.J. Rhee,
Current Measurement in a Gas Filled Drift Tube,
Proc. of the 1989 Particle Accelerator Conference, Vol. 2, 1052, Chicago IL, 1989
13. B. Autin, H. Gundel, H. Riege, J.C. Schnuriger, H. Bauer, J. Christiansen, K. Frank, M. Stetter,
R. Tkotz, **E. Boggasch**, L. DeMenna, G. Miano, F. Dothan,
A Plasma Lens for the CERN Antiproton Collector Scaled from Model and Experiment,
Proc. of the 1989 Particle Accelerator Conference, Vol. 3, 1975, Chicago IL, 1989
14. **E. Boggasch**, M.J. Rhee,
Experimental Study of Pseudospark-Produced Electron Beams,
Proc. of the 2nd International Conference on Dense Z-Pinches,
AIP Conference Proceedings 195, *Dense Z-Pinches*, 418, Laguna Beach CA, 1989
15. M.J. Rhee, **E. Boggasch**,
Emission Measurement of a Pseudospark-Produced Electron Beam,
Proc. of a NATO Advanced Research Workshop on Physics and Applications of Hollow Glow Switches,
343, Lillehammer, Norway, 1989
16. D.H.H. Hoffmann, K.-G. Dietrich, **E. Boggasch**, J. Jacoby, K. Mahrt-Olt, B. Heimrich, M. Winkler,
V. Dubenkov, A. Golubev,
Heavy Ion Beams for Inertial Confinement Fusion and Recent Experimental Results,
Proc. of the 2nd European Particle Accelerator Conference, Vol. 1, 191, Nice, 1990
17. K.-G. Dietrich, **E. Boggasch**, K. Weyrich, D.H.H. Hoffmann,
Energy Loss of Heavy Ions in a Hydrogen Plasma,
Proc. of the Eighth International Conference on High-Power Particle Beams, Vol. 2, 652,
Novosibirsk, USSR, 1990
18. J.G. Wang, D.X. Wang, **E. Boggasch**, D. Kehne, M. Reiser, T. Shea,
Induction Acceleration Module for Maryland Pulse Compression Experiment,
Proc. of the 1990 Linear Accelerator Conference, 668, Albuquerque, NM, 1990
19. R. Kowalewicz, M. Lubrano di Scampamorte, S. Milner, F. Pedersen, H. Riege, J. Christiansen,
K. Frank, M. Stetter, R. Tkotz, **E. Boggasch**,
Performance of the CERN Plasma Lens in Laboratory and Beam Tests at the Antiproton Source,
Proc. of the 1991 Particle Accelerator Conference, Vol. 4, 2631, San Francisco, 1991
20. A. Tauschwitz, **E. Boggasch**, K.-G. Dietrich, D.H.H. Hoffmann, W. Laux, H. Wahl, R. Tkotz,
M. Stetter,
Beam Test Results of a Plasma Lens for Final Focusing of Heavy Ion Beams,
Proc. of the 3rd European Particle Accelerator Conference, Vol. 1, 593, Berlin, 1992
21. **E. Boggasch**, K.-G. Dietrich, D.H.H. Hoffmann, W. Laux, M. Stetter, A. Tauschwitz, R. Tkotz,
H. Wahl,
Plasma Lenses for Heavy Ion Beam Focusing,
Proc. of the 3rd European Particle Accelerator Conference, Vol. 1, 596, Berlin, 1992

22. H. Braun, **E. Boggasch**, A. Tauschwitz, D.H.H. Hoffmann,
Application of Plasma Lenses in Positron Sources,
Proc. of the 3rd European Particle Accelerator Conference, Vol. 2, 1650, Berlin, 1992
23. R. Kowalewicz, M. Lubrano di Scampamorte, S. Maury, S. Milner, H. Riege, J. Christiansen,
K. Frank, M. Stetter, R. Tkotz, **E. Boggasch**, A. Tauschwitz,
Optimizing the CERN Plasma Lens for Antiproton Collection,
presented at the XVth International Conference on High Energy Accelerators, Hamburg, 1992
24. D.H.H. Hoffmann, **E. Boggasch**, K.-G. Dietrich, W. Laux, A. Tauschwitz, J. Jacoby, S. Miyamoto,
*Beam-Target Interaction Experiments at GSI to Study Fundamental Issues of the Physics of Inertial
Confinement Fusion*,
Proc. of the 1st Meeting on The Ion Engineering Society of Japan, 117, Tokyo, Japan, 1992
25. A. Tauschwitz, **E. Boggasch**, D.H.H. Hoffmann, J. Jacoby, U. Neuner, M. Stetter, S. Stöwe,
R. Tkotz, M. de Magistris, W. Seelig,
Heavy-Ion Beam Focusing with a Wall-Stabilized Plasma Lens,
presented at Workshop on Atomic Physics for Ion-Driven Fusion, Kansas, USA, 1994
26. A. Tauschwitz, **E. Boggasch**, H. Wetzler, D.H.H. Hoffmann, U. Neuner, M. Stetter, S. Stöwe,
R. Tkotz, M. de Magistris, W. Seelig,
Plasma Lens Focusing of Heavy Ion Beams Utilizing a Wall-Stabilized Discharge,
presented at the Tenth International Conference on High-Power Particle Beams, San Diego, CA, 1994

III. Contributions to Scientific Meetings (Talks or Posters)

1. **E. Boggasch**, V. Brückner, J. Christiansen, W. Hartmann, C. Schultheiß, A. Tinschmann,
Der nachbeschleunigte Pseudofunkenstrahl,
Verhandl. DPG (VI) 18, 426 (1983)
2. **E. Boggasch**, V. Brückner, J. Christiansen, W. Hartmann, C. Schultheiß,
Entwicklung einer ICF-Diode auf der Basis der Pseudofunken-Entladung,
Verhandl. DPG (VI) 18, 426 (1983)
3. **E. Boggasch**, V. Brückner, J. Christiansen, K. Frank, W. Hartmann, C. Schultheiß,
Development of a gas filled ion diode,
Verhandl. DPG (VI) 19, 1221 (1984)
4. **E. Boggasch**, V. Brückner, J. Christiansen, W. Hartmann, C. Schultheiß,
Experimente mit Entladungen in Pseudofunkengeometrie an Stoßleistungsanlagen,
Verhandl. DPG (VI) 19, 1221 (1984)
5. **E. Boggasch**, V. Brückner, J. Christiansen, K. Frank, W. Hartmann, C. Schultheiß,
Entwicklung einer 1,5 kJ/10 GW-Stoßleistungsanlage,
Verhandl. DPG (VI) 20, 937 (1985)
6. **E. Boggasch**, J. Christiansen, K. Frank, G. Miano, H. Riege,
Pinch Dynamics in a Plasma Lens,
Verhandl. DPG (VI) 20, 1018 (1985)
7. **E. Boggasch**, V. Brückner, K. Frank, H. Riege,
High Power pseudo-spark switches for 100 kA,
Verhandl. DPG (VI) 21, 44 (1986)
8. **E. Boggasch**, V. Brückner, K. Frank, G. Miano, H. Riege,
Longterm Behavior of Z-Pinch Devices,
Verhandl. DPG (VI) 21, 96 (1986)

9. **E. Boggasch**,
Plasma Lens Experiments and Measurements,
in CERN/PS/87-7 (AA) (1987), talk given at „Workshop on ACOL Plasma Lens“, CERN, Geneva, 1986
10. **E. Boggasch**,
Discussion of Experimental Results,
in CERN/PS/87-7 (AA) (1987), talk given at „Workshop on ACOL Plasma Lens“, CERN, Geneva, 1986
11. **E. Boggasch**, J. Christiansen, K. Frank, H. Riege,
The Z-Pinch Plasma Lens. A Powerful Focusing Device for High-Energy Particle Accelerators,
Verhandl. DPG (VI) 22, III, P-20.1, (1987)
12. **E. Boggasch**,
Investigations of the Pinch Dynamics in the z-Pinch Plasma Lens for the ACOL Project,
in CERN/PS/87-99 (AA) (1988), talk given on „Workshop on Plasma Focusing“,
Capri, October 1-3, 1987
13. **E. Boggasch**,
Pinch Current Enhancement by Induced Current Loops,
in CERN/PS/87-99 (AA) (1988), talk given on „Workshop on Plasma Focusing“,
Capri, October 1-3, 1987
14. **E. Boggasch**, J. Christiansen, H. Kuhn, R. Tkotz,
Verbesserung der Aufrichtcharakteristik eines Marxgenerators,
Verhandl. DPG (VI) 23, K-2.3, (1988)
15. **E. Boggasch**, J. Christiansen, K. Frank, H. Kuhn, H. Schröppel, R. Tkotz,
*Erste Ergebnisse bei der Entwicklung eines Mehrgap-Pseudofunkenschalters für Hochspannungs-
anwendungen*,
Verhandl. DPG (VI) 23, K-3.6, (1988)
16. **E. Boggasch**, J. Christiansen, F. Dothan, K. Frank, H. Riege, R. Tkotz,
Die Beobachtung des inversen Skin-Effekts beim dynamischen Z-Pinch,
Verhandl. DPG (VI) 23, P-10-6, (1988)
17. **E. Boggasch**, J. Christiansen, K. Frank, H. Gundel, H. Riege,
*Simultaneous Streak Photography and Magnetic Field Measurements on the Large Z-Pinch of a
Plasma Lens*,
Verhandl. DPG (VI) 23, P-13-1, (1988)
18. F. Begay, **E. Boggasch**, T.A. Fine, H.R. Griem, R.A. Hess, M.J. Rhee, D.J. Weidman,
Spectroscopic Investigation of Plasma Parameters in Collective Ion Acceleration Experiments,
Bull. Am. Phys. Soc. 33, 908 (1988)
19. F. Begay, **E. Boggasch**, T.A. Fine, H.R. Griem, R.A. Hess, J. Moreno, M.J. Rhee, D.J. Weidman,
Spectroscopic Investigation of Plasma Parameters in Plasma Focus Experiments,
1988 IEEE Int. Conf. on Plasma Science, Seattle, Washington, June 6-8, 1988
20. M.J. Rhee, **E. Boggasch**, T.A. Fine,
Behavior fo Net Current in a Gas Filled Drift Tube,
Bull. Am. Phys. Soc. 33, 1950 (1988)
21. E. Boggasch, T.A. Fine, M.J. Rhee,
Measurement of Pseudospark-Produced Electron Beam,
Bull. Am. Phys. Soc. 33, 1951 (1988)
22. F. Begay, **E. Boggasch**, A.W. DeSilva, T.A. Fine, H.R. Griem, R.A. Hess, J. Moreno, M.J. Rhee,
D. Weidman,
Light as a Plasma Probe,
Bull. Am. Phys. Soc. 33, 2053 (1988)

23. **E. Boggasch**, T. Fine, M.J. Rhee,
The Pseudospark as an Electron Beam Source,
Bull. Am. Phys. Soc. 34, 194 (1989)
24. T. Shea, **E. Boggasch**, M. Reiser,
The University of Maryland Electron Pulse Compression Experiment,
Bull. Am. Phys. Soc. 34, 233 (1989)
25. T.A. Fine, **E. Boggasch**, M.J. Rhee,
Current Measurement in a Gas Filled Drift Tube,
Bull. Am. Phys. Soc. 34, 233 (1989)
26. **E. Boggasch**, B. Autin, H. Gundel, H. Riege, H. Bauer, J. Christiansen, K. Frank, R. Tkotz,
L. DeMenna, G. Miano, F. Dothan,
A Plasma Lens for the Antiproton Collector Scaled from Model and Experiment,
Bull. Am. Phys. Soc. 34, 280 (1989)
27. **E. Boggasch**, M.J. Rhee,
Pseudospark as an Electron Beam Source,
Conf. on Plasma Science, Buffalo, New York, May 22-24, 1989
28. M.J. Rhee, **E. Boggasch**,
High Brightness Electron Beam Produced by a Pseudospark Discharge,
Bull. Am. Phys. Soc. 34, 1991 (1989)
29. **E. Boggasch**,
Plasma Lenses for Focusing of Heavy Ion Beams,
talk given at „Special Workshop on Plasma Focusing and Plasma Lenses“
GSI-Darmstadt, January 17-18, 1990
30. **E. Boggasch**,
Plasma Focusing of Intense Heavy Ion Beams,
talk given at 5th International Workshop on „Atomic Physics for Ion Driven Fusion“ Schliersee, F.R.G.,
January 29-February 2, 1990
31. **E. Boggasch**,
Pseudospark-Produced High-Brightness Electron Beams,
Verhandl. DPG (VI) 25, K4.5 (1990)
32. **E. Boggasch**,
Plasmalinsen zur Fokussierung intensiver Schwerionenstrahlen,
Verhandl. DPG (VI) 25, P14.20 (1990)
33. J.G. Wang, **E. Boggasch**, D. Kehne, M. Reiser, T. Shea, D.X. Wang,
An Electron Beam Injector for Pulse Compression Experiments,
Bull. Am. Phys. Soc. 35, 956 (1990)
34. **E. Boggasch**, H. Wahl, J. Jacoby, K.-G. Dietrich, D.H.H. Hoffmann, W. Laux, M. Elfers,
C.R. Haas,
Plasma Lenses for Heavy-Ion Beam Focusing,
presented at the „Symposium on Heavy Ion Inertial Fusion“, Monterey, CA, December 3-6, 1990
35. K.-G. Dietrich, D.H.H. Hoffmann, **E. Boggasch**, H. Wahl,
Energy Loss and Charge State of Heavy Ions in a Hydrogen Plasma,
presented at the „Symposium on Heavy Ion Inertial Fusion“, Monterey, CA, December 3-6, 1990
36. D.H.H. Hoffmann, K.-G. Dietrich, W. Laux, **E. Boggasch**, J. Jacoby, K. Mahrt-Olt, A. Tauschwitz,
B. Heimrich, M. Winkler, P. Spiller,
Intense Beam-Target Interaction Experiments with Heavy Ions,
presented at the „Symposium on Heavy Ion Inertial Fusion“, Monterey, CA, December 3-6, 1990

37. **E. Boggasch**,
Plasma Lenses for Heavy-Ion Beam Focusing,
presented at the Hirschegg Meeting on „Physics of High Energy Density in Matter”,
Hirschegg, Klein-Walsertal (Austria), February 3-9, 1991
38. D.H.H. Hoffmann, P. Amatulli, **E. Boggasch**, K.-G. Dietrich, W. Laux, K. Mahrt-Olt, A. Tauschwitz,
H. Wahl,
Beam-Plasma Interaction Experiments with Heavy-Ion Beams,
presented at 8th Topical Conference on „Atomic Processes in Plasmas”,
Portland, Maine, August 25-29, 1991
39. **E. Boggasch**,
Plasma Lens Studies at GSI and Plans for SIS,
talk given at the meeting on „Plasma Lenses for Accelerator Applications”, CERN,
Geneva, October 1-2, 1991
40. M. Stetter, R. Tkotz, J. Christiansen, K. Frank, U. Neuner, R. Kowalewicz, H.-Riege, **E. Boggasch**,
Ergebnisse des Strahltestes der CERN-Plasmalinse,
Verhandl. DPG (VI) 27, P 20.36 (1992)
41. A. Tauschwitz, **E. Boggasch**, K.-G. Dietrich, D.H.H. Hoffmann, W. Laux, M. Stetter, R. Tkotz,
H. Wahl,
Fokussierung von Ionenstrahlen mit einer Plasmalinse,
Verhandl. DPG (VI) 27, K 11.2 (1992)
42. S. Miyamoto, J. Jacoby, B. Heimrich, **E. Boggasch**, K.-G. Dietrich, D.H.H. Hoffmann, W. Laux,
A. Tauschwitz, H. Wahl, R.W. Müller,
Energy Loss and Charge State in a Hydrogen Plasma at Low Velocities,
presented at the European Research Conference on „Prospects for Heavy Ion Inertial Fusion”,
Aghia Pelaghia, Crete, Greece, September 26-October 1, 1992
43. A. Tauschwitz, **E. Boggasch**, J. Jacoby, M. De Magistris, D.H.H. Hoffmann, W. Laux, U. Neuner,
T. Wagner,
Beam Test of a Plasma Lens for Heavy Ion Beam Focusing,
presented at the European Research Conference on „Prospects for Heavy Ion Inertial Fusion”,
Aghia Pelaghia, Crete, Greece, September 26-October 1, 1992
44. **E. Boggasch**, A. Tauschwitz, J. Jacoby, M. De Magistris, D.H.H. Hoffmann, W. Laux, U. Neuner,
T. Wagner,
Plasma Lenses for Heavy Ion Beam Focusing,
presented at the European Research Conference on „Prospects for Heavy Ion Inertial Fusion”,
Aghia Pelaghia, Crete, Greece, September 26-October 1, 1992
45. J. Jacoby, S. Miyamoto, K. Weyrich, **E. Boggasch**, K.-G. Dietrich, B. Heimrich, D.H.H. Hoffmann,
W. Laux, A. Tauschwitz, H. Wahl,
Energy loss and charge state measurements of heavy ions passing a hydrogen plasma,
presented at the VIth Int. Conf. on „The Physics of Highly Charged Ions”, Manhattan, Kansas,
September 28- October 2, 1992
46. **E. Boggasch**,
Diagnostic of High Current Discharges for/by Particle Focusing,
talk given at the 103 WE-Heraeus Seminar, Physikzentrum Bad Honnef, November 3, 1992
47. **E. Boggasch**, A. Tauschwitz, M. de Magistris, D.H.H. Hoffmann,
Stromverteilung in linearen Hochstrom-Plasmaentladungen,
Verhandl. DPG (VI) 28, P 8.8 (1993)
48. J. Jacoby, S. Miyamoto, K. Weyrich, **E. Boggasch**, K.-G. Dietrich, B. Heimrich, D.H.H. Hoffmann,
W. Laux, A. Tauschwitz, H. Wahl,
Extremer Energieverlust von schweren Ionen in Plasmen,
Verhandl. DPG (VI) 28, P 11.3 (1993)

49. A. Tauschwitz, **E. Boggasch**, D.H.H. Hoffmann, M. de Magistris, W. Seelig,
Die Plasmalinse - eine effektive Möglichkeit zur Fokussierung hochenergetischer Ionenstrahlen,
Verhandl. DPG (VI) 28, P 11.5 (1993)
50. K. Weyrich, J. Jacoby, S. Miyamoto, **E. Boggasch**, K.-G. Dietrich, B. Heimrich, D.H.H. Hoffmann,
W. Laux, A. Tauschwitz, H. Wahl,
Erhöhter Energieverlust von 45 keV/u Kr⁺-Ionen im Plasma,
Verhandl. DPG (VI) 28, P 14.2 (1993)
51. U. Neuner, J. Christiansen, K. Frank, M. Stetter, S. Stöwe, R. Tkotz, **E. Boggasch**,
D.H.H. Hoffmann, P. Spiller, A. Tauschwitz,
Eine Plasmalinse zur Feinfokussierung von Schwerionenstrahlen,
Verhandl. DPG (VI) 28, P 14.9 (1993)
52. M. de Magistris, **E. Boggasch**, A. Tauschwitz, D.H.H. Hoffmann,
A Simulation Code for Diagnostics of High-Current Discharges via Particle Beams,
Verhandl. DPG (VI) 28, P 14.47 (1993)
53. A. Tauschwitz, **E. Boggasch**, D.H.H. Hoffmann, W. Seelig, H. Wetzler, M. de Magistris, U. Neuner,
M. Stetter, S. Stöwe,
Dynamik und Stabilisierungsmechanismen in gepulsten, wandstabilisierten Entladungen,
Verhandl. DPG (VI) 29, P 4.42 (1994)

IV. Invited Talks

1. **E. Boggasch**,
Z-Pinch Plasma Lenses for Focusing High-Energy Particles in Accelerators,
invited talk given at the Electrophysics Seminar Series, University of Maryland, College Park,
September 16, 1988
2. **E. Boggasch**,
Z-Pinch Plasmalinsen zur Fokussierung hochenergetischer geladener Teilchen,
invited talk given at the Doktorandenseminar „Hohe Energiedichte in Materie“, GSI-Darmstadt,
July 7, 1989
3. **E. Boggasch**,
Plasma Lens Focusing of High-Energy Charged Particle Beams,
invited talk given at the „Plasma Physics Seminar“, GSI-Darmstadt, September 5, 1990
4. **E. Boggasch**,
Plasma Lenses for Fine-Focusing of Heavy Ion Beams,
invited talk at the „Universita' Degli Studi di Napoli Federico II“, Naples, Italy, July 15, 1991
5. **E. Boggasch**,
Plasma Lens Focusing of Charged Particle Beams,
invited talk presented in the seminar of the experimental research division at the „institut de physique
nucléaire“, Orsay, France, October 19, 1992
6. **E. Boggasch**,
Fokussierung geladener Teilchenstrahlen mit Plasmalinsen,
invited talk given at GSI-Palaver, Darmstadt, November 11, 1992
7. **E. Boggasch**,
Physik und Anwendung der Plasmalinse,
invited talk given at the Seminar on „Aktuelle Probleme der Beschleuniger- und angewandten
Schwerionenphysik“, Institut für Angewandte Physik, Universität Frankfurt, December 4, 1992

8. **E. Boggasch**,
Einige plasmaphysikalische Lösungsansätze für die Erzeugung, den Transport und die Fokussierung intensiver Teilchenstrahlen,
invited talk given at the Seminar on „Dichte Plasmen“, GSI-Darmstadt, October 14, 1994
9. **E. Boggasch**,
Einige plasmaphysikalische Lösungsansätze für die Erzeugung, den Transport und die Fokussierung intensiver Teilchenstrahlen,
invited talk given at the Tandemkolloquium, Physikalisches Institut, Universität Erlangen, November 3, 1994
10. **E. Boggasch**,
Die Beobachtung der Bose-Einstein-Kondensation,
Habitationsvortrag, gehalten vor der Naturwissenschaftlichen Fakultät I, Universität Erlangen, 24. Juli 1997

V. Technical Reports and Contributions to Annual Reports

1. **E. Boggasch**, V. Brückner, J. Christiansen, K. Frank, W. Hartmann, C. Schultheiß,
Experimente mit stromstarken Entladungen in Pseudofunkengeometrie an Stoßleistungsanlagen,
Jahresbericht des Physikalischen Instituts der Universität Erlangen-Nürnberg 1981/82,
238, Erlangen, 1982
2. **E. Boggasch**, V. Brückner, J. Christiansen, W. Hartmann, C. Schultheiß,
Die Stoßleistungsanlage PULSATOR,
Jahresbericht des Physikalischen Instituts der Universität Erlangen-Nürnberg 1981/82,
371, Erlangen, 1982
3. **E. Boggasch**, G. Miano, H. Riege,
Pinch Dynamics in a Plasma Lens: Description with a Modified Snowplow Model and Comparison with Experimental Results,
CERN/PS/AA/Acol Note 84-14 (1984)
4. B. Autin, H. Riege, **E. Boggasch**, K. Frank, L. DeMenna, G. Miano,
Plasma Lens for the CERB Antiproton Source,
CERN/PS/AA 84-13 (1984)
5. **E. Boggasch**, H. Riege,
The Triggering of High Current Pseudo-Spark Switches,
CERN/PS/85-3 (AA) (1985)
6. **E. Boggasch**, V. Brückner, H. Riege,
A 400 kA Pulse Generator with Pseudo-Spark Switches,
CERN/PS/85-30 (AA) (1985)
7. **E. Boggasch**, R. Grüb,
Differentiating measuring coils for pulsed currents in the MA-MHz-range,
CERN/EF 86-14 (1986) and CERN/PS/86-25 (AA) (1986)
8. F. Dothan, H. Riege, **E. Boggasch**, K. Frank,
Dynamics of a Z Pinch for Focusing High-Energy Charged Particles,
CERN/PS/AA 87-1 (1987)
9. P. Billault, H. Riege, M. van Gulik, **E. Boggasch**, K. Frank, R. Seeböck,
The Development of Pseudospark Switches,
Yellow Report CERN 87-7, 1987
10. **E. Boggasch**,
Plasma Lens Experiments and Measurements,
in CERN/PS/87-7 (AA) (1987)

11. **E. Boggasch**,
Discussion of Experimental Results,
in CERN/PS/87-7 (AA) (1987)
12. **E. Boggasch**,
Investigations of the Pinch Dynamics in the z-Pinch Plasma Lens for the ACOL Project,
in CERN/PS/87-99 (AA) (1988)
13. **E. Boggasch**,
Pinch Current Enhancement by Induced Current Loops,
in CERN/PS/87-99 (AA) (1988)
14. K.-G. Dietrich, **E. Boggasch**, D.H.H. Hoffmann, K. Weyrich, H. Wahl,
Energy Loss of Heavy Ions in a Dense Z-Pinch Plasma,
GSI-Report 90-1, 369 (1990) and GSI-Report 90-15, 7 (1990)
15. **E. Boggasch**, K.-G. Dietrich, D.H.H. Hoffmann, H. Wahl,
Development of Plasma Lenses for Focusing of Heavy Ion Beams,
GSI-Report 90-1, 374 (1990) and GSI-Report 90-15, 7 (1990)
16. K.-G. Dietrich, **E. Boggasch**, D.H.H. Hoffmann, H. Wahl, M. Elfers, C.R. Haas, V. Dubenkov,
A. Golubev,
Evolution of the Plasma Density in a Z-Pinch Discharge,
GSI-Report 91-27, 5 (1991)
17. K.-G. Dietrich, **E. Boggasch**, D.H.H. Hoffmann, J. Jacoby, H. Wahl, M. Elfers, C.R. Haas,
V. Dubenkov, A. Golubev,
Charge State of Fast Heavy Ions in Hydrogen Plasma,
GSI-Report 91-27, 6 (1991) and GSI-Report 91-1, 423 (1991)
18. **E. Boggasch**, D.H.H. Hoffmann,
Advanced Focusing Techniques for Intense Heavy Ion Beams,
GSI-Report 91-27, 7 (1991)
19. **E. Boggasch**, J. Jacoby, A. Tauschwitz, H. Wahl, K.-G. Dietrich, D.H.H. Hoffmann, W. Laux,
M. Elfers, C.R. Haas, V.P. Dubenkov, A.A. Golubev,
Z-Pinch Plasma Lens Focusing of a Heavy Ion Beam,
GSI-Report 91-1, 424 (1991) and GSI-Report 91-27, 8 (1991)
20. A. Tauschwitz, **E. Boggasch**, H. Wahl, K.-G. Dietrich, D.H.H. Hoffmann, W. Laux, M. Stetter,
R. Tkotz,
Fine Focusing of a Heavy Ion Beam by a Plasma Lens,
GSI-Report 91-27, 9 (1991)
21. M. Elfers, C.R. Haas, **E. Boggasch**, K.-G. Dietrich, D.H.H. Hoffmann,
Plasma Lens Focusing of a Heavy Ion Beam,
GSI-Report 91-27, 10 (1991)
22. K.-G. Dietrich, P. Amatulli, **E. Boggasch**, M. Chabot, B. Heimrich, D.H.H. Hoffmann, J. Jacoby,
W. Laux, A. Tauschwitz, H. Wahl, H. Wetzler,
Energy Loss of Fast Heavy Ions in Partly Ionized Plasmas,
GSI-Report 92-1, 227 (1992) and GSI-Report 92-27, 5 (1992)
23. B. Heimrich, J. Jacoby, S. Miyamoto, **E. Boggasch**, K.-G. Dietrich, D.H.H. Hoffmann, W. Laux,
A. Tauschwitz, H. Wahl,
Energy Loss and Charge State of Ions in a Hydrogen Plasma at Low Velocities,
GSI-Report 92-1, 228 (1992) and GSI-Report 92-27, 6 (1992)

24. A. Tauschwitz, **E. Boggasch**, K.-G. Dietrich, D.H.H. Hoffmann, W. Laux, H. Wahl, M. Stetter, R. Tkotz,
Plasma Lens for Fine-Focusing of a Heavy Ion Beam,
GSI-Report 92-1, 230 (1992) and GSI-Report 92-27, 8 (1992)
25. **E. Boggasch**, D.H.H. Hoffmann,
Advanced Focusing Techniques for Intense Heavy Ion Beams,
GSI-Report 92-1, 231 (1992) and GSI-Report 92-27, 7 (1992)
26. P. Spiller, M. Winkler, C. Weil, B. Hartmann, H. Wollnik, **E. Boggasch**, A. Tauschwitz,
D.H.H. Hoffmann,
Pulsed-Power Quadrupole Lenses,
GSI-Report 92-1, 232 (1992) and GSI-Report 92-27, 9 (1992)
27. **E. Boggasch**, K.-G. Dietrich, D.H.H. Hoffmann, W. Laux, M. Stetter, A. Tauschwitz, R. Tkotz, H. Wahl,
Plasma Lenses for Heavy Ion Beam Focusing,
in GSI-Preprint 92-25
28. A. Tauschwitz, **E. Boggasch**, K.-G. Dietrich, D.H.H. Hoffmann, W. Laux, H. Wahl, R. Tkotz, M. Stetter,
Beam Test Results of a Plasma Lens for Final Focusing of Heavy Ion Beams,
in GSI-Preprint 92-25
29. J. Jacoby, S. Miyamoto, K. Weyrich, **E. Boggasch**, K.-G. Dietrich, B. Heimrich, D.H.H. Hoffmann,
W. Laux, A. Tauschwitz, H. Wahl,
Energy loss and charge state measurements of heavy ions passing a hydrogen plasma,
GSI-Preprint 92-68, 69 (1992)
30. R. Kowalewicz, M. Lubrano di Scampamorte, S. Maury, S. Milner, H. Riege, J. Christiansen, K. Frank,
M. Stetter, R. Tkotz, **E. Boggasch**, A. Tauschwitz,
Optimizing the CERN Plasma Lens for Antiproton Collection,
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31. J. Jacoby, S. Miyamoto, K. Weyrich, **E. Boggasch**, B. Heimrich, D.H.H. Hoffmann, W. Laux,
R.W. Müller, H. Wahl,
Extreme Energy Loss of Heavy Ions in a Hydrogen Plasma,
GSI-Report 93-1, 243 (1993) and GSI-Report 93-17, 5 (1993)
32. **E. Boggasch**, A. Tauschwitz, M. de Magistris, D.H.H. Hoffmann,
Summary on Plasma Lens Research at GSI,
GSI-Report 93-1, 244 (1993) and GSI-Report 93-17, 8 (1993)
33. A. Tauschwitz, **E. Boggasch**, D.H.H. Hoffmann, M. de Magistris, H. Wetzler,
Diagnostics of a Plasma Lens Discharge,
SI-Report 93-1, 245 (1993) and GSI-Report 93-17, 9 (1993)
34. U. Neuner, J. Christiansen, M. Stetter, S. Stöwe, R. Tkotz, T. Wagner, **E. Boggasch**,
D.H.H. Hoffmann, P. Spiller, A. Tauschwitz,
Development of a Plasma Lens as a Final Focus Lens for Heavy Ion Beams,
GSI-Report 93-1, 246 (1993) and GSI-Report 93-17, 14 (1993)
35. M. de Magistris, **E. Boggasch**, P. Spiller, A. Tauschwitz, D.H.H. Hoffmann,
Numerical Simulations of Optimized Plasma Lenses,
GSI-Report 93-1, 248 (1993) and GSI-Report 93-17, 10 (1993)
36. H. Wetzler, **E. Boggasch**, K.-G. Dietrich, D.H.H. Hoffmann, A. Tauschwitz,
Optical Diagnostics of a Dense z-Pinch Plasma,
GSI-Report 93-1, 249 (1993) and GSI-Report 93-17, 6 (1993)
37. **E. Boggasch**, B. Heimrich, A. Tauschwitz, P. Spiller, D.H.H. Hoffmann,
Comparison of Plasma Lens with Quadrupole Lens Focusing,
GSI-Report 93-1, 253 (1993) and GSI-Report 93-17, 11 (1993)

38. M. Chabot, K.-G. Dietrich, P. Amatulli, **E. Boggasch**, B. Heimrich, D.H.H. Hoffmann, J. Jacoby, W. Laux, A. Tauschwitz, H. Wahl, H. Wetzler,
Progress in the Charge State Analysis Experiment of Fast Heavy Ions in Dense Plasma,
GSI-Report 93-17, 7 (1993)
39. A. Tauschwitz, **E. Boggasch**, D.H.H. Hoffmann, M. de Magistris, W. Seelig,
Estimation of Plasma Lens Performance,
GSI-Report 94-1, 181 (1994) and GSI-Report 94-10, 9 (1994)
40. A. Tauschwitz, M. de Magistris, **E. Boggasch**, M. Dornik, D.H.H. Hoffmann, J. Jacoby, W. Seelig, P. Spiller, H. Wetzler,
Performance of a Shape Optimized Conical Plasma Lens,
GSI-Report 94-10, 10 (1994) and GSI-Report 95-06, 13 (1995)

VI. Monographs

1. **E. Boggasch**,
Aufbau einer Hochleistungspulsanlage sowie experimentelle und theoretische Untersuchungen tromstarker Entladungen in Pseudofunkengeometrie,
Diplomarbeit, Physikalischen Instituts der Universität Erlangen-Nürnberg, Erlangen, 1983
2. **E. Boggasch**,
Die Plasmalinse, eine stromstarke z-Pinch-Entladung zur Fokussierung geladener Teilchen in Hochenergiebeschleunigern,
Doktorarbeit, Universität Erlangen-Nürnberg, Erlangen, 1987
3. **E. Boggasch**,
Plasmaphysikalische Lösungsansätze für die Erzeugung, den Transport und die Fokussierung intensiver Teilchenstrahlen,
Habilitationsschrift, Universität Erlangen-Nürnberg, Erlangen, 1996

VII. Book Contributions

1. M.J. Rhee, **E. Boggasch**,
Emission Measurement of a Pseudospark-Produced Electron Beam,
in „Physics and Applications of Pseudosparks" edited by Martin A. Gundersen and Gerhard Schaefer, p. 343-348, NATO ASI Series. Series B: Physics, vol. 219, Plenum Press, New York, 1990
2. H. Riege, **E. Boggasch**,
High Power, High Current Pseudospark Switches,
in „Gas Discharge Closing Switches" edited by Gerhard Schaefer, M. Kristiansen and A. Guenther, p. 543-549. Series: Advances in pulsed power technology, vol.~2, Plenum Press, New York 1990

VII. Patents

1. **E. Boggasch**, A. Tauschwitz, M. Stetter, R. Tkotz, K.-G. Dietrich, D.H.H. Hoffmann, W. Laux,
Verfahren zum Fokussieren eines Strahles geladener Teilchen und Plasmalinse für das Verfahren,
Patentschrift Nr. 42 14 417 vom 02.09.1993, Deutsches Patentamt München
2. **E. Boggasch**, A. Tauschwitz, M. Stetter, R. Tkotz, K.-G. Dietrich, D.H.H. Hoffmann, W. Laux,
Method of Focusing a Charged Particle Beam and Plasma Lens therefor,
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