List of Publications

Dietmar Wilhelm Weiss

Patent applications

- Lindholt, P.; Weiss, D.: A variable displacement piston machine with sensor. Sauer-Danfoss ApS, Denmark, US Patent Application, 2009
- Tychsen, T.; Weiss, D.: Fluid-Rotationsmaschine mit einer Sensoranordnung, Sauer-Danfoss ApS, Denmark, German Patent Application, 2010
- Weiss, D.: Dehumidification Method and Arrangement, Danfoss Power Electronics A/S, Denmark, EU Patent Application, 2012

Open source

• Weiß, D. W.: grayboxes - Creation and evaluation of white box, gray box and black box models of physical and chemical transport phenomena, Open source library, 2016-, github.com/dwweiss/grayboxes

Articles

Felgenhauer, A.; Weiß, D.: Eine nichtkonforme FEM mit Standardnetzgenerierung für die Poissongleichung im Raum. Wissenschaftliche Zeitschrift der TU Magdeburg 33 (1989) 6, 31-34

Lube, G.; Weiß, D.: Numerische Simulation des stationären 2D-und 3D Wärme-und Stofftransports mittels Stromliniendiffusion-FEM. Technische Mechanik 11 (1990) 4, 229-237

Lube, G.; Weiß, D.: Streamline Diffusion Finite Element Method for Quasilinear Elliptic Problems. Zeitschrift für angewandte Mathematik und Mechanik 71 (1991) 6, 671-674

Lube, G.; Weiß, D.: Finite element method of Galerkin/Least-Squares type for singulary perturbed parabolic equations. Preprint Math 11/91, TU Magdeburg, 1991

Lube, G.; Weiß, D.: Galerkin/Least-Squares Methods for Singulary Perturbed Parabolic Equations. Zeitschrift für angewandte Mathematik und Mechanik 73 (1993) 7/8, T912-915

Weiß, D.; Lube, G.: Anwendung der Finite-Elemente-Methode zur Simulation von Temperaturverteilung und Nahtausbildung beim Lichtbogenschweißen. Zeitschrift für angewandte Mathematik und Mechanik, 74 (1994) 6, T551-T553

Lube, G.; Weiß, D.: Stabilized Finite Element Methods for Singulary Perturbed Parabolic Problems. Applied Numerical Mathematics 17 (1995) 431-459

Mahrle, A.; Schmidt, J.; Weiss, D.: Simulation of Temperature Fields in Arc and Beam Welding. Heat and Mass Transfer 36 (2000), 117-126

Pittner, A.; Weiß, D.; Schwenk, C.; Rethmeier, M.: A Methodology to Improve Applicability of Welding Simulation, Science & Technology of Welding and Joining 13 (2008) 6, 496-508

Proceedings

Lube, G.; Weiß, D.: Simulation von Diffusion-Konvektion-Reaktion-Gleichungen mittels Stromlinien-Diffusion-FEM. WBZ Computational Mathematics, TU Dresden, 7/1990, 54-61

Lube, G.; Weiß, D.: Galerkin/least-Squares methods for singulary perturbed parabolic equations. Proceedings of ISAM 1991 (eds. H.G.Roos et. al), TU Dresden 1991, 83-90

Weiß, D.; Schmidt, J.; Franz, U.; Cronacher, F.: Simulation von Temperaturverteilung und Nahtausbildung beim Schweißen von Platten in unterschiedlicher Position. Tagungsband der 1. Fachtagung "Schweißtechnische Software" im Rahmen der Fachmesse "Schweißen und Schneiden", Essen, September 1993, DVS-Verlag Düsseldorf, 140-143

- Auge, A.; Lube, G.; Weiß, D.: Galerkin/Least-Squares-FEM and Anisotropic Mesh Refinement. Proceedings of the 9th GAMM-Seminar 1993, Note on Numerical Fluid Mechanics, Volume 46, Vieweg-Verlag, Braunschweig, Wiesbaden 1994, 1-16
- Weiß, D.; Franz, U.; Lube, G.; Schmidt, J.: Numerical Simulation of Temperature Distribution and Seam Forming in Narrow Gap Welding. Proceedings of the 3rd International Conference: Advanced Computational Methods in Heat Transfer, Southampton, UK 1994 (eds. L. C. Wrobel, C. A. Brebbia, A. J. Nowack), Computational Mechanics Publications, Southampton 1994, UK, 255-262
- Weiß, D.; Lube, G.: Numerical Simulation of Temperature Distribution and Seam Forming in Narrow Gap Welding. Proceedings of the 11th GAMM-Seminar: Numerical Treatment of Coupled Systems, Kiel, Germany 1995 (eds. W. Hackbusch, G. Wittum), Notes on Numerical Fluid Mechanics, Volume 51, Vieweg-Verlag, Braunschweig, Wiesbaden, 1995
- D.; Franz, U.; Schmidt, J.: A Model of Deformation and Temperature Distribution in Weld Pools during Arc Welding. Mathematical Modelling of Weld Phenomena 2 (ed. H. Cerjak), Mathematical Modelling Series, Book 594, Institute of Materials, London, UK, 1995, 22-39
- Weiß, D.; Franz, U.; Ouaissa, B.; Schmidt, J.: Rechnergestützte Simulation von Temperaturfeld und Nahtausbildung beim MAG-Schweißen in senkrechter Position. DVS-Verlag, Düsseldorf, DVS- Bericht 179, 1996, 93-99
- Weiß, D.; Franz, U.; Schmidt, J.: Simulation of the weld pool formation during vertical arc welding with emphasis on the influence of groove preparation. Proceedings of the 6th International Conference: Computer Technology in Welding, Lanaken, Belgium, June 1996
- Mahrle, A.; Schmidt, J.; Weiss, D.: Numerical Simulation of Heat Transfer in Welding Processes, In: J. S. Lee Ed.:Heat Transfer 1998, Proceedings of the 11th Int. Heat Transfer Conference, Kyongju, Korea 1998, Taylor and Francis, Levittown, USA, Vol. 4, 213-218

Mahrle, A.; Schmidt, J.; Weiss, D.: Influence of Marangoni convection on weld pool shape and temperature distribution in laser beam welding, Proceedings of the 3rd European Thermal Sciences Conference, Heidelberg, Germany, June 2000

Weiss, D.; Mahrle, A.; Schmidt, J.: Simulation of Welding Processes Based on Micro Models, Proceedings of the 6th International Conference: Advanced Computational Methods in Heat Transfer, Madrid, Spain, June 2000

Weiss, D.; Franz, U.; Mahrle, A.; Schmidt, J.: Modelling of Capacitor Discharge Stud Welding, Proceedings of the 10th TWI Conference: Computer Technology in Welding and Manufacturing, Copenhagen, Denmark, June 2000

Weiss, D., Lauenroth, Th.: Simulation of Capacitor Discharge Stud Welding, 45th International Conference of Scandinavian Simulation Society, Lyngby, Denmark, September 2004

Weiss, D.W., Christensen, K.H., Kristensen, J.K.: Acceleration of Numerical Simulation of Inverse Problems in Gas Metal Arc Welding, 14th Biennial International Conference on Computer Technology in Welding and Manufacturing, Sheffield, Great Britain, June 2004

Pittner, A.; Weiß, D.; Jianchun Ji, J.; Seyffarth, P.: Vorhersage der Nahtgeometrie beim Laser-MSG- Hybridschweißen durch verknüpfte mathematische und empirische Modelle. Innovationsforum: Hybridtechnologie-Fügetechnik für die Fertigung der Zukunft, Halle, Germany, November 2004

Pittner, A.; Weiß, D.; Jianchun Ji, J.; Seyffarth, P.: Forecasting of Geometry of a Weld for Laser/GMA hybrid Welding. 1st International Conference on Computer Technologies in Joining of Materials, Tula, Russia, February 2005

Schwenk, C., Rethmeier, M., Weiss, D.: Rapid Generation of Temperature Fields for Simulation of Welding Induced Distortions, in: H. Cerjak et al, (Eds.): Mathematical Modelling of Weld Phenomena 8, 2007, 835-846

Weiss, D., Christensen, K.H., Kristensen, J.K.: Computerised Calibration of Thermal-Mechanical Welding Models, in: H. Cerjak et al (Eds.): Mathematical Modelling of Weld Phenomena 8, 2007

Pittner, A., Schwenk, C., Rethmeier, M., Weiss, D.: A New Methodology for the Fast Temperature Field Generation for Welding Simulation, 17th International Conference on Computer Technology in Welding and Manufacturing Compcon, Cranfield, GB, June 2008

Pittner, A., Schwenk, C., Rethmeier, M., Weiss, D.: Automated Generation of Temperature Fields for Numerical Welding Simulation, 8th International Symposium of the Japan Welding Society, Kyoto, Japan, Nov 2008, 158

Pittner, A., Weiss, D., Schwenk, C., Rethmeier M.: Fast Generation and Prediction of Welding Temperature Fields for Multiple Experiments, 4th International Conference Mathematical Modelling and Information Technologies in Welding and Related Processes, E. O. Paton Electric Welding Institute, Katsiveli, Ukraine, May 2008

Pittner, A., Schwenk, C., Weiss, D., Rethmeier, M.: An efficient solution of the inverse heat conduction problem for welding simulation, in: H. Cerjak et al (Eds.): Mathematical Modelling of Weld Phenomena 9, 2009

Reports

Lube, G.; Weiß, D.: Stabilized Finite Element Methods for Singulary Perturbed Parabolic Problems. NAM-Bericht 71, University of Göttingen, Germany, September 1994

Weiß, D.; Lube, G.: Finite Element Code GLSFEM. Report, University of Magdeburg, Germany, March 1995

Weiss, D.: pmlib - Model Library for Process Modeling. Report, Technical University of Denmark, Lyngby, February 2004

Weiss, D.: Public Framework for Decomposition of Process Models. Report, Technical University of Denmark, Lyngby, Denmark, July 2004

Public Presentations

- Weiß, D.: Ermittlung der effektiven Wämeleitfähigkeit strukturierter Stoffe unter Anwendung der Finite-Elemente-Methode. National Student Conference on Physics, Martin Luther University, Halle, Germany, February 1989
- Weiß, D.: Anwendung der Finite-Elemente-Methode zur Berechnung des Temperaturfeldes und thermischer Stoffwerte poröser Materialien. Konferenz Apparate-und Anlagenbau, TU Magdeburg, Germany, February 1989
- Lube, G.; Weiß, D.: Computersimulation von 3D-Wärme-bzw. Stofftransportproblemen mittels Stromliniendiffusions-FEM. 4. Kolloquium Wärme-und Stoffübertragung, TU Dresden, February 1990
- Weiß, D.: Anwendung von GLSFEM zur Berechnung thermodynamischer Probleme. Forschungsseminar, Technical University of Magdeburg, Institute for Analysis, Germany, May 1991
- Weiß, D.: Modellierung der Wärme-und Kraftwirkung des Lichtbogens mit dem Ziel der Temperaturfeldermittlung. GKMBI Workshop, Schierke, Germany, April 1993
- Weiß, D.: Berechnung der Temperaturverteilung in Schweißverbindungen unter Berücksichtigung der hydromechanischen Vorgänge im Schmelzbad. Technical University of Braunschweig, Germany, May 1993
- Weiß, D.: Finite Element Simulation of Temperature Distribution During Arc Welding. Carleton University, Ottawa, Canada, February 1994
- Weiß, D.: Simulation of Arc Welding with Deep Depressed Weld Pool Surfaces. The Pennsylvania State University, State College, PA, February 1994
- Weiß, D.; Lube, G.: Modellierung und numerische Simulation des Engspaltschweißens bei senkrechter Plattenposition. Weierstraß Institute, Berlin, Germany, August 1995
- Weiß, D.: TENAS Computersimulation des MAG-Engspaltschweißens. SLV Halle, Germany, September 1996

Weiss, D.; Mendez, P.; Eagar, T.: Simulation of metal transfer effects in GMAW. INEEL/MIT Engineering Research Program, Annual Review Meeting, Idaho Falls, ID, June 1997

Holtz, R.; Weiss, D.: Experimental and Numerical Investigation of TIG Nd:YAG Laser Hybrid Welding, Joining of Materials, Helsingør, Denmark, May 1999

Weiss, D.: Calibration of phenomenological models of fusion welding. University of Goettingen, Germany, June 2004

Weiss, D.: Kalibrierung phänomenologischer Modelle mittels Neuronaler Netzwerke. Fraunhofer Institute, Freiburg, Germany, June 2004

Weiss, D.: Calibration of process models employing artificial intelligence. Stralsund University of Applied Science, Germany, April 2005

Weiss, D. W.: Error compensation in flow meters, DANSIS Seminar on Flow Metering, Skanderborg, Denmark, 2017, Pdf

Schumacher, A.; Weiss, D.W., Rahmfeld, R.: Condition Monitoring of an Axial Piston Pump based on Graybox Modelling, Int. Fluid Power Conference, Aachen, Germany, 2022

Thesis

Weiß, D.: Ermittlung des Temperaturfeldes und der effektiven Wärmeleitfähigkeit mit Hilfe der Methode der finiten Elemente bei Stoffen mit poröser Struktur. M.Sc. thesis, Technical University of Magdeburg, Germany, 1989

Weiß, D.: Finite element simulation of temperature distribution and weld pool deformation in gas metal arc welding (German: Finite-Elemente-Simulation von Temperaturfeld und Schmelzbaddeformation beim Lichtbogenschweißen). Ph.D. thesis, Otto-von-Guericke University, Magdeburg, Germany, 1994