

### Published conference articles

> 2019	> 2018	> 2017	> 2016	> 2015	> 2014	> 2013	> 2012	> 2011	> 2010	> 2009	> 2008	
> 2007	> 2006	> 2005	> 2004	> 2003	> 2002	> 2001	> 2000	> 1999	> 1998	> 1997	> 1996	> 1995

#### Publizierte Konferenzbeiträge 2019

1. **Novelletto Ricardo G. A. and Sommerfeld M.**  
A thorough analysis of temporal plate erosion by particle impacts and validation of Lagrangian models. Proceedings of PARTEC 2019, Paper43.5 (2019)
2. **Sommerfeld, M.**  
Potentials and Constraints for the application of CFD to dry powder inhalers. Proceedings of PARTEC 2019, Paper 22.3 (2019)
3. **Sui, M., Sommerfeld, M. and Lars Pasternak, L.**  
Modelling the occurrence of bouncing in droplet collision for different liquids. ILASS–Europe 2019, 29th Conference on Liquid Atomization and Spray Systems, 2-4 September 2019, Paris, France.

#### Publizierte Konferenzbeiträge 2018

1. **Lain, S. and Sommerfeld, M.**  
Numerical simulation on the impact of advanced droplet collision models on an interacting spray. ICLASS 2018, 14<sup>th</sup> Triennial International Conference on Liquid Atomisation and Spray Systems. Chicago, IL, USA, July 22 – 26, 2018

#### Publizierte Konferenzbeiträge 2017

1. **Sommerfeld, M. (plenary lecture)**  
Lagrangian modelling of droplet collisions in spraying systems. Proceedings of the 8<sup>th</sup> European Combustion Meeting, Dubrovnik, Croatia, 18. – 21. April, pp. 15 – 26 (2017)
2. **Sommerfeld, M. and Muniz, M. (keynote lecture)**  
On the importance of modelling bubble dynamics for numerical calculations of bubble columns. 3<sup>rd</sup> International Symposium on Multiscale Multiphase Process Engineering (MMPE), Toyama, Japan, 8. – 11. May, KL-1, pp. 15 – 24 (2017)
3. **Schmalfuß, S. and Sommerfeld M.**  
Particle dispersion in fluid phase resonance mixers. 3<sup>rd</sup> International Symposium on Multiscale Multiphase Process Engineering (MMPE), Toyama, Japan, 8. – 11. May, L-32, pp. 196 – 203 (2017)
4. **Schmalfuß, S. and Sommerfeld, M.**  
Importance of the different fluid forces on particle dispersion in fluid-phase resonance mixers. 12<sup>th</sup> International Conference on CFD in Oil & Gas, Metallurgical and Process Industries, SINTEF, Trondheim, Norway, May 30<sup>th</sup> – June 1<sup>st</sup> (2017)
5. **Sommerfeld, M. and Lain, S.**  
Numerical analysis of sprays with an advanced collision model. ILASS–Europe 2017, 28th Conference on Liquid Atomization and Spray Systems, 6 – 8 September 2017, Valencia, Spain, pp. 418 – 431 (2017)  
> <http://dx.doi.org/10.4995/ILASS2017.2017.4785> (<http://dx.doi.org/10.4995/ILASS2017.2017.4785%20>)
6. **Pasternak, L. and Sommerfeld, M.**  
Experimental Investigation of Size Effects in Colliding Droplets. ILASS–Europe 2017, 28th Conference on Liquid Atomization and Spray Systems, 6 – 8 September 2017, Valencia, Spain, pp. 710 – 715 (2017)  
> <http://dx.doi.org/10.4995/ILASS2017.2017.4781> (<http://dx.doi.org/10.4995/ILASS2017.2017.4781%20>)
7. **Muniz, M. and Sommerfeld, M.**  
Effect of bubble dynamics and force formulations on bubble column predictions with the Euler/Lagrange approach. 14th International Conference on Multiphase Flow in Industrial Plants, Desenzano del Garda (BS), Italy, September 13th-15th, 2017.
8. **Novelletto Ricardo G.A. and Sommerfeld, M.**  
Numerical and experimental studies of particle erosion in view of considering temporal surface variation. 14th International Conference on Multiphase Flow in Industrial Plants, Desenzano del Garda (BS), Italy, September 13th-15th, 2017.

#### Publizierte Konferenzbeiträge 2016

1. **Cui, Y. and Sommerfeld, M.**  
Modelling carrier particle wall collisions for predicting drug detachment efficiencies inside dry powder inhalers. Proceedings PARTEC 2016, Int. Congress on Particle Technology, April 19. – 21. 2016, Nürnberg, Germany
2. **Sommerfeld, M.**  
Modelling requirements for particle agglomeration in fluid flows. XXIV ICTAM (International Conference Theoretical and Applied Mechanics), 21-26 August 2016, Montreal, Canada.
3. **Sommerfeld, M.**  
Modelling separation processes of colliding droplets. ILASS – Europe 2016, 27th Annual Conference on Liquid Atomization and Spray Systems, 5. – 7. Sep. 2016, Brighton, UK

---

#### Publizierte Konferenzbeiträge 2015

1. **Sommerfeld, M. (invited lecture)**  
Modelling requirements for CFD calculations of spray dryers. Jornadas em Escoamentos Multifásicos 2015 (JEM 2015), Campinas Brazil, 25th to 27th March 2015
2. **Sommerfeld, M., Lain, S. and Qadir, Z.**  
Strategy in modelling irregular shaped particle behavior in confined turbulent flows. Proceedings of the COST Action FP1005 Final Conference and EUROMECH Colloquium 566 "Anisotropic Particle in Turbulence", Trondheim Norway, pp. 70 – 74, June 9. to 12. (2015).
3. **Sommerfeld, M., Lain, S. and Ernst, M.**  
Structures in turbulent particle-laden flows: Particle clustering and segregation. Proceedings of the International Conference "Fluxes and Structures in Fluids", Kaliningrad Russia, pp. 234 – 237, June 23. – 26. (2015)
4. **Li, H. and Sommerfeld, M.**  
Characterization of Droplet Collisions Consisting of High-Viscous or Viscoelastic Liquids. ICLASS 2015, 13th Triennial International Conference on Liquid Atomization and Spray Systems, Tainan, Taiwan, August 23-27, 2015
5. **Sommerfeld, M., Cui, Y. and Schmalfuß, S. (invited lecture)**  
Multi-scale approach for calculating drug powder delivery by dry powder inhalers. Particle Simulations, pp. 84 – 86 (2015)
6. **Pasternak, L. and Sommerfeld, M.**  
Experimental studies on fibre-laden jet by the use of pulsed LED-PIV system. 14th Workshop on Two-Phase Flow Predictions, Halle (Saale), Germany, 07.-10. September 2015

---

#### Publizierte Konferenzbeiträge 2014

1. **Pasternak, L. and Sommerfeld, M.**  
Experimental studies on particle-laden jet by the use of pulsed LED in a PIV/PLIF system. 17th International Symposium on Application of Laser Techniques to Fluid Mechanics, Lisbon, Portugal, July 07. – 10. 2014
2. **Darvan, A. and Sommerfeld, M.**  
Modeling and numerical analysis of the drying stages during single droplet drying. Proceedings of the 19th International Drying Symposium (IDS 2014), Lyon, France, August 24. – 27. 2014, ISBN 978-2-7598-1631-6
3. **Lain, S., Sommerfeld, M., Quintero, B. and Qadir, Z.**  
Modelling and computation of irregular non-spherical particles transport in confined turbulent flow. 13th International Conference on MULTIPHASE FLOW IN INDUSTRIAL PLANTS. Sestri Levante (Genova), Italy, September 17-19, 2014
4. **Schmalfuß, S., Sommerfeld, M., Säuberlich, R.**  
Numerical Analysis on the Particle Behaviour in a Fluid Phase Resonance Mixer. 13th International Conference on MULTIPHASE FLOW IN INDUSTRIAL PLANTS. Sestri Levante (Genova), Italy, September 17-19, 2014

---

#### Publizierte Konferenzbeiträge 2013

1. **Cui, Y., Schmalfuß, S. and Sommerfeld, M.**  
On the detachment of fine drug powder from carrier particles within an inhaler device. CD-ROM Proceedings 8th International Conference on Multiphase Flow, ICMF2013, Jeju, Korea, May 26. – May 31, 2013, Paper No. 438.
2. **Ernst, M., Dietzel, M., Cui, Y. and Sommerfeld, M.**  
Lattice-Boltzmann simulations for analysing particle-scale phenomena. CD-ROM Proceedings 8th International Conference on Multiphase Flow, ICMF2013, Jeju, Korea, May 26. – May 31, 2013, Paper No. 441.
3. **Sommerfeld, M. and Kuschel, M.**  
Collisions of high viscous droplets: Experiments and modelling. CD-ROM Proceedings 8th International Conference on Multiphase Flow, ICMF2013, Jeju, Korea, May 26. – May 31, 2013, Paper No. 849.
4. **Schmalfuß, S., Sommerfeld, M. and Säuberlich, R.**  
Simulation of the Influence of Particle Properties on Fluid Phase Resonance Mixing. CD-ROM Proceedings 8th International Conference on Multiphase Flow, ICMF2013, Jeju, Korea, May 26. – May 31, 2013, Paper No. 914.
5. **Lain, S. and Sommerfeld, M.**  
Kinematic simulations of non-spherical particle response behaviour. CD-ROM Proceedings 8th International Conference on Multiphase Flow, ICMF2013, Jeju, Korea, May 26. – May 31, 2013, Paper No. 1007.
6. **Qadir, Z. and Sommerfeld, M.**

---

#### Publizierte Konferenzbeiträge 2012

1. **Sommerfeld, M. and Stübing, S.**  
Lagrangian modeling of agglomeration for applications to spray drying. 9th International ERCOFTAC Symposium on Engineering Turbulence Modeling and Measurements, Thessaloniki, Greece, 6. – 8. June 2012
2. **Lain, S. and Sommerfeld, M.**  
Influence of geometrical and operational conditions on the performance of pneumatic conveying systems: A numerical study by the Euler-Lagrange approach. 9th International ERCOFTAC Symposium on Engineering Turbulence Modeling and Measurements, Thessaloniki, Greece, 6. – 8. June 2012
3. **Kuschel, M., and Sommerfeld, M.**  
Visualisation of time-resolved mixing and penetration processes during droplet collisions using PLIF. 16th Int. Symposium on applications of Laser Techniques to fluid mechanics, Lissabon, 9. – 12. July 2012.
4. **Pasternak, L., Müller, A. and Sommerfeld, M.**  
Simultaneous velocity and concentration measurements of a turbulent jet in crossflow using multilayer PIV. 16th Int. Symposium on applications of Laser Techniques to fluid mechanics, Lissabon, 9. – 12. July 2012.
5. **Kuschel, M., Focke, C., Bothe, D. and Sommerfeld, M.**  
Experiments and Direct Numerical Simulations of binary collisions of miscible liquid droplets with different viscosities, In Proceedings of ICLASS - 2012, 12th International Conference on Liquid Atomization and Spray Systems, Heidelberg, 3. – 5. September 2012.
6. **Cui, Y. and Sommerfeld, M.**  
Forces on micron-sized particles randomly distributed on the surface of a large carrier particle. CHoPS, 7th international Conference for Conveying and Handling of Particulate Solids, Friedrichshafen, Germany, 10. – 13. September 2012
7. **Sommerfeld, M. and Lain, S.**  
Analysis of dilute phase pneumatic conveying through pipe systems by the Euler/Lagrange approach. Ninth International Conference on CFD in the Minerals and Process Industries, CSIRO, Melbourne, Australia, 10-12 December 2012

---

#### Publizierte Konferenzbeiträge 2011

1. **Kuschel, M. and Sommerfeld, M.**  
Collision regimes of the series of alcohols. ILASS – Europe 2011, 24th Annual Conference on Liquid Atomization and Spray Systems, Estoril, Portugal, September 2011
2. **Lain, S. and Sommerfeld, M.**  
Numerical analysis of a pneumatic conveying system consisting of a horizontal pipe, 90o-bend and vertical pipe. 12th International Conference on MULTIPHASE FLOW IN INDUSTRIAL PLANTS. Paper No. 141, Ischia (Napoli), Italy September 21-23, 2011

---

#### Publizierte Konferenzbeiträge 2010

1. **Lain, S. and Sommerfeld, M.**  
The Three-dimensional computations of particle laden channel flow using the Euler-Lagrange approach. CD-ROM Proceedings of the 12th Workshop on Two-Phase Flow Predictions, Halle (Saale) Germany, March 2010
2. **Sommerfeld, M. and Reichardt, Th.**  
Shadow imaging technique for analysing bubble motion. CD-ROM Proceedings of the 12th Workshop on Two-Phase Flow Predictions, Halle (Saale) Germany, March 2010
3. **Horender, S. and Sommerfeld, M.**  
A stochastic collision model to simulate aggregation and sintering of nanoscaled particles. CD-ROM Proceedings of the WCPT6 2010, World Congress on Particle Technology, Nuremberg, Germany 26.-29. April 2010
4. **Dietzel, M. und Sommerfeld, M.**  
DNS der Umströmung heterogener Partikel mittels LBM. CD-ROM Proceedings SPRAY 2010; 9. Workshop über Sprays, Techniken der Fluidzerstäubung und Untersuchung von Sprühvorgängen, Heidelberg, 3.-5. Mai 2010
5. **Kröner, M. und Sommerfeld, M.**  
Experimentelle Untersuchung von Tropfenkollisionen viskoser Stoffe. CD-ROM Proceedings SPRAY 2010; 9. Workshop über Sprays, Techniken der Fluidzerstäubung und Untersuchung von Sprühvorgängen, Heidelberg, 3.-5. Mai 2010
6. **Sommerfeld, M.(keynote lecture)**  
Modelling particle collisions and agglomeration in gas-particle flows. CD-ROM Proceedings 7th International Conference on Multiphase Flow. ICMF2010 Tampa, FL USA, May 30. – June 4. (2010)
7. **Lain, S., Ernst, M. and Sommerfeld, M.**  
Colliding Particle-pair Velocity Correlation Function in Turbulent Flows. CD-ROM Proceedings 7th International Conference on Multiphase Flow. ICMF2010, Tampa, FL USA, May 30. – June 4. (2010)
8. **Lain, S., Ernst, M. and Sommerfeld, M.**  
Lagrangian modelling of agglomerate structures in a homogeneous isotropic turbulence. CD-ROM Proceedings 7th International Conference on Multiphase Flow. ICMF2010, Tampa, FL USA, May 30. – June 4. (2010)
9. **Kröner, M. und Sommerfeld, M.**  
Experimental investigation of droplet collisions with higher viscosity. CD-ROM Proceedings ILASS – Europe 2010, 23rd Annual Conference on Liquid

#### Publizierte Konferenzbeiträge 2009

1. **Sommerfeld, M., Lain, S. and Lipowsky, J. (plenary lecture)**  
The Euler/Lagrange approach: A powerful tool for design and optimisation. International Symposium on Multiphase Flow, Heat Mass Transfer and Energy Conversion, Plenary Lecture.
2. **Dietzel, M. and Sommerfeld, M.**  
LBM simulations on agglomerate transport and deposition. Proceedings of the 6th International Symposium on Multiphase Flow, Heat Mass Transfer and Energy Conversion, 2009, Paper No. MN-29
3. **Horender, S. and Sommerfeld, M.**  
Influence of radiative heat loss on coalescence of particles in a turbulent H<sub>2</sub>/O<sub>2</sub> flame. THMT'09: 6th International Symposium on Turbulence, Heat and Mass Transfer, Rome, 18. September, 2009

---

#### Publizierte Konferenzbeiträge 2008

1. **Dietzel, M. and Sommerfeld, M.**  
Determination of aerodynamic coefficients of agglomerates using the Lattice-Boltzmann-Method. Proceedings 6th Int. Conf. on CFD in Oil & Gas, Metallurgical and Process Industries. Trondheim Norway, Paper No. CFD08-105, June 2008.
2. **Lipowsky, J. and Sommerfeld, M.**  
Influence of particle agglomeration and agglomerate porosity on the simulation of a gas cyclone. Proceedings 6th Int. Conf. on CFD in Oil & Gas, Metallurgical and Process Industries. Trondheim Norway, Paper No. CFD08-043, June 2008
3. **Soriano, J.O., Sommerfeld, M. and Burkhardt, A.**  
Validation of a cavitation and turbulence induced model for the primary breakup of Diesel jets. ILASS Europe 2008, Como Lake, Italy, September 2008
4. **Horender, S. und Sommerfeld, M.**  
Modellierung der Nukleation von SiO<sub>2</sub>-Partikeln in einem Flammenreaktor. Process-Net Jahrestagung, Karlsruhe, Okt. 2008, Chemie Ingenieur Technik Jahrg. 80, 1402-1403 (2008)
5. **Dietzel, M. und Sommerfeld, M.**  
Bestimmung aerodynamischer Beiwerte von Agglomeraten mit der Lattice-Boltzmann-Methode. Process-Net Jahrestagung, Karlsruhe, Okt. 2008, Chemie Ingenieur Technik, Jahrg. 80, 1326 (2008)
6. **Reichardt, T. und Sommerfeld, M.**  
Stereoskopische Aufnahmen zur Analyse der Blasenoszillation. Process-Net Jahrestagung, Karlsruhe, Okt. 2008, Chemie Ingenieur Technik, Jahrg. 80, 1327-1328 (2008)

---

#### Publizierte Konferenzbeiträge 2007

1. **Stübing, S. and Sommerfeld, M.**  
Lagrangian modeling of agglomerate structure. PARTEC2007, Nürnberg, Paper P01\_18 (2007)
2. **Horender, S., Sommerfeld, M., Schwerin, M., Badeke, K.U. and Röper, J.**  
Experiments and simulation of SiO<sub>2</sub> nanoparticle production in an industrial flame reactor. Proceedings of PARTEC 2007, Nürnberg, Paper S01\_1 (2007)
3. **Reichardt, Th. and Sommerfeld, M.**  
Euler-Lagrange Approach with spatially distributed coupling. Proceedings of the 6th International Conference on Multiphase Flow, ICMF2007, Leipzig Germany, Paper No. S3\_Mon\_C\_7 (2007)
4. **Schomburg, H., Dietzel, M., Michaelis, B., Sommerfeld, M. and Teike, G.**  
Lattice Boltzmann model with dynamical grid refinement for multiphase flow around a single fibre. Proceedings of the 6th International Conference on Multiphase Flow, ICMF2007, Leipzig Germany, Paper No. S2\_Tue\_B\_18 (2007)
5. **Teike, G., Dietzel, M., Michaelis, B., Schomburg, H. and Sommerfeld, M.**  
Multiscale Lattice-Boltzmann simulation of particle deposition on surfaces influenced by an electric field. Proceedings of the 6th International Conference on Multiphase Flow, ICMF2007, Leipzig Germany, Paper No. S2\_Tue\_B\_19 (2007)
6. **Dietzel, M., Sommerfeld, M., Teike, T. and Schomburg, H.**  
Determination of aerodynamic coefficients of agglomerates. Proceedings of the 6th International Conference on Multiphase Flow, ICMF2007, Leipzig Germany, Paper No. S2\_Tue\_C\_22 (2007)
7. **Stübing, S. and Sommerfeld, M.**  
Lagrangian modeling of agglomerate structure. Proceedings of the 6th International Conference on Multiphase Flow, ICMF2007, Leipzig Germany, Paper No. S2\_Thu\_A\_47 (2007)
8. **Lain, S., Quintero, B. and Sommerfeld, M.**  
Numerical study of secondary flow in pneumatic conveying of solids in a horizontal pipe. Proceedings of the 6th International Conference on Multiphase Flow, ICMF2007, Leipzig Germany, Paper No. S3\_Thu\_B\_49 (2007)
9. **Lipowsky, J. and Sommerfeld, M.**  
LES-simulation of the formation of particle strands in swirling flows using an unsteady Euler-Lagrange approach. Proceedings of the 6th International Conference on Multiphase Flow, ICMF2007, Leipzig Germany, Paper No. S3\_Thu\_C\_54 (2007)
10. **Horender, S., Hardalupas, Y.**

Turbulent particle dispersion and gradient diffusion in the wake of a cylinder. Proceedings of the 6th International Conference on Multiphase Flow, ICMF2007, Leipzig Germany, Paper No. S3\_Fri\_A\_64 (2007)

11. **Soriano, J.O., Sommerfeld, M., Burkhardt, A. And Leuteritz**  
Modelling the influence of the nozzle flow on diesel spray atomization under high pressure injection conditions. ILASS Europe 2007, Mugla, Turkey, September 2007

---

#### Publizierte Konferenzbeiträge 2006

1. **Schaub, F., Burgold, M. and Sommerfeld, M.**  
Bubble motion in grid generated turbulence. 7th German/Japanese Symposium on Bubble Columns, Goslar, Germany, May 2006, pp.211-216
2. **Horender, S. and Sommerfeld, M.**  
Droplet-vapour interaction in an evaporating monodispersed spray. Spray'06, Workshop über Sprays, Erfassung von Sprühvorgängen und Techniken der Fluidizersübung. DLR Lampoldshausen, Mai 2006
3. **Blei, S. and Sommerfeld, M.**  
Consideration of particle interactions in spray dryer modelling: An extended Euler-Lagrange approach. 15th International Drying Symposium (IDS 2006) Budapest, Hungary, August 2006
4. **Sommerfeld, M. (invited lecture)**  
Application of advanced imaging techniques for analyzing multiphase flows. Proceedings of the 5th International Symposium on Measurement Techniques for Multiphase Flows, Macau, China, September 2006

---

#### Publizierte Konferenzbeiträge 2005

1. **Horender, S., Mehlheim, J.A. and Sommerfeld, M.**  
Modelling non-isotropic particle dispersion in a shear layer. Proceedings of the 11th Workshop on Two-Phase Flow Predictions (DC-Rom), Merseburg, April 2005
2. **Lain, S. and Sommerfeld, M.**  
Study on the pneumatic conveying of non-spherical particles in a turbulent horizontal channel. Proceedings of the 11th Workshop on Two-Phase Flow Predictions (CD-Rom), Merseburg, April 2005
3. **Lipowsky, J. and Sommerfeld, M.**  
Time dependent simulation of a swirling two-phase flow using an anisotropic turbulent dispersion model. Workshop Turbulenz in der Energietechnik, Darmstadt, Juni 2005
4. **Horender, S. and Sommerfeld, M.**  
Droplet-droplet and droplet-vapour interaction in an evaporating monodispersed spray. ILASS Europe 2005, Proceedings of the 20th Annual Conference on Liquid Atomization and Spray Systems, Orleans, France, (Eds. C. Chauveau and J. Page), 283-287 (2005)

---

#### Publizierte Konferenzbeiträge 2004

1. **Platzer, E. and Sommerfeld, M.**  
Modelling of the turbulent atomisation using a two-fluid model combined with an Euler/Lagrange approach. 5th International Conference on Multiphase Flow, ICMF'04, Yokohama, Japan, Paper No. 119 (2004)
2. **Schaub, F. and Pluschkell W.**  
Microkinetic Approach to the Mass Transfer in Heterogeneous Buoyant Plumes. 5th International Conference on Multiphase Flow, ICMF'04, Yokohama Japan, Paper No. 120 (2004)
3. **Horender, S. and Hardalupas Y.**  
Carrier-Phase Turbulence Modification due to Concentration Fluctuations of Solid Particles. 5th International Conference on Multiphase Flow, ICMF'04, Yokohama, Japan, Paper No. 243 (2004)
4. **Lain, S. and Sommerfeld, M.**  
LES of gas-liquid flow in a cylindrical laboratory bubble column. 5th International Conference on Multiphase Flow, ICMF'04, Yokohama, Japan, Paper No. 337 (2004)
5. **Ho, C.-A. and Sommerfeld, M.**  
Analysis and modeling of particle agglomeration in a plane shear layer. 5th International Conference on Multiphase Flow, ICMF'04, Yokohama, Japan, Paper No. 419 (2004)
6. **Blei, S. and Sommerfeld, M.**  
Computation of agglomeration for non-uniform dispersed phase properties – an extended stochastic collision model. 5th International Conference on Multiphase Flow, ICMF'04, Yokohama, Japan, Paper No. 438 (2004)
7. **Takeuchi, G., Kawaguchi, T., Hishida, K., Maeda, M. and Sommerfeld, M.**  
Spatial distributions of droplet size and velocity in air heated spray measured by interferometric laser imaging technique. 12th International Symposium Application of Laser Techniques to Fluid Mechanics, Lisbon (2004)
8. **Blei, S. and Sommerfeld, M.**  
Investigation of droplet collisions of viscous process fluids by imaging techniques. ILASS Europe 2004, Proceedings of the 19th International Conference on Liquid Atomization and Spray Systems, Nottingham, UK, (Ed. B. Azzopardi), 100-105 (2004)
9. **Deux, E. and Sommerfeld, M.**  
Modelling of spray atomisation and dispersion. ILASS Europe 2004, Proceedings of the 19th International Conference on Liquid Atomization and Spray

Systems, Nottingham, UK, (Ed. B. Azzopardi), 195-200 (2004)

10. **Horender, S. and Sommerfeld, M.**

Reduced coalescence of droplets due to evaporation. ILASS Europe 2004, Proceedings of the 19th International Conference on Liquid Atomization and Spray Systems, Nottingham, UK, (Ed. B. Azzopardi), 231-236 (2004)

---

**Publizierte Konferenzbeiträge 2003**

1. **Blei, S. and Sommerfeld, M.**

Lagrangian modelling of agglomeration during spray drying processes. ICLASS 2003, 9th International Conference on Liquid Atomization and Spray Systems, Sorrento, Italy, July 2003, Paper No. 16-4

2. **Blei, S. and Sommerfeld, M.**

Mit Agglomeration verbundene Sprühtrocknungsprozesse: Charakterisierung und Modellierung mit dem Euler-Lagrange-Ansatz. DECHEMA/GVC-Jahrestagung, Chemie Ingenieur Technik, Jahrg. 75, 1107 (2003)

3. **Bourloutski, E. and Sommerfeld, M.**

Modelling of bubble tumbling motion in the frame of the Euler/Lagrange approach. Proc. of the 6th Japanese/German Symposium on Bubble Columns, Nara, Japan, Nov. 2003

4. **Bröder, D. and Sommerfeld, M.**

Bubble behaviour and interaction in a swarm. Engineering Conferences International: Computational Fluid Dynamics in Chemical Reaction Engineering III, Davos Switzerland, May 25-30, (2003)

5. **Bröder, D. and Sommerfeld, M.**

Experimental analysis of the meso-scale structure in bubble columns. Proc. of the 6th Japanese/German Symposium on Bubble Columns, Nara, Japan, Nov. 2003

6. **Kussin J. and Sommerfeld, M.**

Behaviour of non-spherical particles in horizontal channel flow. EUROMECH 447, Interaction Phenomena in Turbulent Particle-Laden Flows, Tallinn, Estonia, June 18-20, 2003

7. **Ho, C.-A., Blei, S. and Sommerfeld, M.**

Numerical studies on the modelling of impact efficiency for inter-particle collisions. EUROMECH 447, Interaction Phenomena in Turbulent Particle-Laden Flows, Tallinn, Estonia, June 18-20, 2003

8. **Linemann, R., Runge, J., Sommerfeld, M. and Weißgüttel, U.**

Densification of powders due to vibrations and shocks. Proc. of the 4th Int. Conf. for Conveying and Handling of Particulate Solids, Budapest, Hungary, pp. 4.45-4.50, May 2003

9. **Platzer, E. and Sommerfeld, M.**

Modelling of turbulent atomisation with an Euler/Euler approach including the drop size prediction. ICLASS 2003, 9th International Conference on Liquid Atomization and Spray Systems, Sorrento, Italy, July 2003, Paper No. 2-3

10. **Sommerfeld, M.**

Imaging and puls light velocimetry applied for two-phase flow studies. Workshop on Experimental Fluid Dynamics in Multi Phase Flow, The Swedish Industrial Association for Multiphase Flows, Chalmers, Göteborg, June 2003

11. **Sommerfeld, M. and Bourloutski, E. (invited lecture)**

How realistic can one model bubbly flows?. Engineering Conferences International: Computational Fluid Dynamics in Chemical Reaction Engineering III Davos Switzerland, May 25-30, (2003)

12. **Sommerfeld, M. and Kussin J.**

Analysing the wall collision process of non-spherical particles. Engineering Conferences International: Computational Fluid Dynamics in Chemical Reaction Engineering III, Davos Switzerland, May 25-30, (2003)

---

**Publizierte Konferenzbeiträge 2002**

1. **Blei, S., Ho, C.-A. and Sommerfeld, M.**

A stochastic droplet collision model with consideration of impact efficiency. ILASS Europe 2002, 18th Annual Conference on Liquid Atomization and Spray Systems, Zaragoza, Spain. September 2002

2. **Blei, S. und Sommerfeld, M.**

Experimentelle Untersuchung von Tropfenkollisionen als Basis Lagrangescher Modellierungen. Spray 2002, 7. Workshop über Techniken der Fluidzerstäubung und Untersuchungen von Sprühvorgängen, Freiberg, November 2002

3. **Bourloutski, E. and Sommerfeld, M.**

Transient Euler/Lagrange calculations of dense gas-liquid-solid flows in bubble columns with consideration of phase interaction. Proceedings of the 10th Workshop on Two-Phase Flow Predictions (Ed. M. Sommerfeld), 113-123 (2002)

4. **Bröder, D. and Sommerfeld, M.**

Experimental studies of bubble interaction and coalescence in a turbulent flow by an imaging PIV/PTV system. Submitted to the 11th International Symposium Application of Laser Techniques to Fluid Mechanics, Lisbon (2002)

5. **Bröder, D., Ruzicka, M., Drahos, J. and Sommerfeld, M.**

Visual study of bubble-bubble interaction with high-speed camera. Proceedings of the 10th Workshop on Two-Phase Flow Predictions (Ed. M. Sommerfeld), 394-399 (2002)

6. **Ho, C. A. and Sommerfeld, M.**  
Analysis of particle transport processes for the calculation of particle separation in a gas cyclone. 15th Int. Congress of Chemical and Process Engineering, CHISA, Prag, Czech Republic, August 2002
7. **Jørgensen, J., Rosendahl, L. and Sommerfeld, M.**  
Using a Lattice Boltzmann simulation tool to predict the aerodynamic properties of freely suspended cylinders. Proceedings of the 10th Workshop on Two-Phase Flow Predictions (Ed. M. Sommerfeld), 143-150 (2002)
8. **Lain, S., Garcia, J.A., Aisa, L. and Sommerfeld, M.**  
Influence of particle-particle collisions on a round jet laden with solids. ILASS Europe 2002, 18th Annual Conference on Liquid Atomization and Spray Systems, Zaragoza, Spain. September, 2002
9. **Platzer, E. and Sommerfeld, M.**  
Modelling of turbulent atomisation with a combined Euler/Lagrange Euler/Euler approach: Starting with a two-fluid model in the dense spray region. ILASS Europe 2002, 18th Annual Conference on Liquid Atomization and Spray Systems, Zaragoza, Spain. September, 2002
10. **Platzer, E. und Sommerfeld, M.**  
Strahlzerfall-Berechnung mit einem Zweifluidmodell und experimentelle Validierung. Spray 2002, 7. Workshop über Techniken der Fluidzerstäubung und Untersuchungen von Sprühvorgängen, Freiberg, November 2002
11. **Sommerfeld, M. und Bourloutski, E. (invited lecture)**  
Modellbildung und numerische Berechnung von Gas-Flüssig-Strömungen. GVC/ DECHEMA Jahrestagung 2002, Wiesbaden, Juni 2002
12. **Sommerfeld, M. and Bourloutski, E. (invited lecture)**  
Requirements for accurate numerical calculations of bubbly flows and associated sensitivity study. 15th Int. Congress of Chemical and Process Engineering, CHISA, Prag, Czech Republic, August 2002
13. **Sommerfeld, M., Bröder, D., Ruzicka, M. and Drahos, J.**  
Modelling bubble collisions, coalescence and break-up using the Lagrangian approach. 15th Int. Congress of Chemical and Process Engineering, CHISA, Prag, Czech Republic, August 2002

---

#### Publizierte Konferenzbeiträge 2001

1. **Böttner, C.-U. and Sommerfeld, M.**  
Euler/Lagrange calculations of particle motion in turbulent flow coupled with an electric field, Proceedings ECCOMAS, Computational Fluid Dynamics 2001, Swansea, UK (2001)
2. **Böttner, C.-U. and Sommerfeld, M.**  
Numerical and experimental investigation of particle collection process in electrostatic precipitator, International Congress for Particle Technology, March 27-29, Paper No. 047, PARTEC (2001)
3. **Böttner, C.-U. and Sommerfeld, M.**  
Numerical calculation of the electrostatic powder painting, Proc. of the 4th Int. Conf. on Multiphase Flow, New Orleans (USA), May 27 - June 1, ICMF (2001)
4. **Bröder, D. and Sommerfeld, M.**  
Experimental studies on the hydrodynamics in a bubble column by an imaging PIV/PTV-system. 4th Int. Symp. On Particle Image Velocimetry, Göttingen, Paper P1089 (2001)
5. **Göz, M. F., Bunner, B., Sommerfeld, M. and Tryggvason, G.**  
Direct numerical simulation of bidisperse bubble swarms, Proc. of the 4th Int. Conf. on Multiphase Flow, New Orleans (USA), May 27 - June 1, ICMF (2001)
6. **Ho, C.A. and Sommerfeld, M.**  
Agglomeration of particles in turbulent flow: A stochastic Lagrangian model, International Congress for Particle Technology, March 27-29, Paper No. 048, PARTEC (2001)
7. **Kohlmann, J., Slowik, G. and Sommerfeld, M.**  
A new atomisation technology for swirl nozzles and applications in chemical and food industries. Proceedings of the 3rd European Congress of Chemical Engineering, Nürnberg, June 2001
8. **Kohlmann, J., Sommerfeld, M., Slowik, G., Bröder, D. und Böttner, C.-U.**  
Drallgesteuerte Zykclone zur Abtrennung von sprühgetrockneten Produkten. Spray Drying 01, Dortmund, October 2001
9. **Kussin, J. and Sommerfeld, M.**  
Investigation of particle behaviour and turbulence modification in particle-laden channel flow, International Congress for Particle Technology, March 27-29, Paper No. 046, PARTEC (2001)
10. **Lain, S., Bröder, D. and Sommerfeld, M.**  
Numerical simulations of the hydrodynamics in a bubble column: Quantitative Comparisons with experiments, Proc. of the 4th Int. Conf. on Multiphase Flow, New Orleans (USA), May 27 - June 1, ICMF (2001)
11. **Lain, S., Kussin, J. and Sommerfeld, M.**  
Experimental studies and modelling of four-way coupling in particle-laden horizontal channel flow, Proc. 2nd Int. Symp. on Turbulence and Shear Flow Phenomena, Stockholm, June 27-29 (2001)
12. **Slowik, G. and Sommerfeld, M.**  
Experimental studies on the droplet/droplet interaction phenomena in multi-component spray evaporation. Proceedings of the 3rd European Congress of Chemical Engineering, Nürnberg, June 2001

13. **Slowik, G., Kohlmann, J., Sommerfeld, M. and Bürgermeister, M.**  
Variation of mean droplet diameter, spectrum and nozzle capacity in spray dryers during process. Spray Drying 01, Dortmund, October 2001
14. **Sommerfeld, M., Bröder, D. and Kussin, J. (keynote lecture)**  
Recent developments and applications of non-intrusive optical techniques for the analysis of dispersed multiphase flow, Proc. of the 4th Int. Conf. on Multiphase Flow, New Orleans (USA), May 27 - June 1, ICMF (2001)
15. **Sommerfeld, M., Laín S. and Kussin J.**  
Analysis of transport effects of turbulent gas-particle flow in a horizontal channel, Proc. of the 4th Int. Conf. on Multiphase Flow, New Orleans (USA), May 27 - June 1, Paper No. 520, ICMF (2001)

---

#### Publizierte Konferenzbeiträge 2000

1. **Bröder, D., Göz, M. F., Laín, S. and Sommerfeld, M.**  
Analysis and modelling of turbulence in bubble columns, 14th Int. Congress of Chemical and Process Engineering CHISA 2000, Prag (2000)
2. **Bröder, D., Göz, M. F., Laín, S. and Sommerfeld, M.**  
Studies of the hydrodynamics in a bubble column: Experiments, modelling and direct numerical simulations, Preprints of the 5th German-Japanese Symposium Bubble Columns, TU Bergakademie Freiberg, 17-22 (2000)
3. **Bröder, D., Laín, S. and Sommerfeld, M.**  
Experimental studies of the hydrodynamics in a bubble column, Preprints of the 5th German-Japanese Symposium Bubble Columns, TU Bergakademie Freiberg, 125-130 (2000)
4. **Bröder, D. and Sommerfeld, M.**  
A PIV/PTV system for analysing turbulent bubbly flows, Proceedings of the 10th International Symposium Application of Laser Techniques to Fluid Mechanics, Lisbon, Paper 10.1 (2000)
5. **Göz, M. F.**  
Froude number scaling of fluidized bed instabilities, in: Flamant, G. et al. (eds.): Fluidisation (II) - Proc. 3rd European Conference on Fluidization (Toulouse, 2000), 575-582 (2000)
6. **Göz, M. F., Bunner, B., Sommerfeld, M. and Tryggvason, G.**  
Simulation of bubbly gas-liquid flows by a parallel finite-difference / front-tracking method, Tätigkeitsbericht für 1999 an das Rechenzentrum Karlsruhe, Mai (2000)
7. **Göz, M.F., Sommerfeld, M., Bunner, B. and Tryggvason, G.**  
Direct numerical simulation of the interaction of gas bubbles in a liquid: Effect of deformability and bidispersity, Preprints of the 5th German-Japanese Symposium Bubble Columns, TU Bergakademie Freiberg, 288-293 (2000)
8. **Göz, M.F., Sommerfeld, M., Bunner, B. and Tryggvason, G.**  
Direkte numerische Simulation der Bewegung von Gasblasen in einer Flüssigkeit, GVC-Jahrestagung 2000, Chemie Ingenieur Technik, Jahrg. 72, 106f 1066 (2000)
9. **Hartke, O., Kohlmann, J. and Slowik, G.**  
The control of the cut size of hydrocyclones, World Filtration Congress 2000, Brighton (2000)
10. **Kohlmann, J., Schmidt, M., Slowik, G. and Bürgermeister M.**  
Atomisation technology to minimize the effects of nozzle wear on the droplet size, ILASS Europe, Darmstadt (2000)
11. **Laín, S., Bröder, D. and Sommerfeld, M.**  
Numerical modelling of the hydrodynamics in a bubble column using the Euler-Lagrange approach, Proceedings Int. Symp. Multiphase flow and Transport Phenomena, Antalya, Turkey, Nov. (2000)
12. **Laín, S., Bröder, D. and Sommerfeld, M.**  
Numerical studies on the hydrodynamics in a bubble column using the Euler-Lagrange approach, Proceedings of the 9th Workshop on Two-Phase Flow Predictions, Merseburg, April 1999, 242-251 (2000)
13. **Linemann, R.; Runge, J.; Sommerfeld; M.; Weißgüttel, U.**  
Densification of bulk materials in process engineering, International Workshop on Compaction of Soils, Granulates and Powders, Innsbruck 28.-29. Februar 2000, in Compaction of Soils, Granulates and Powders, Editors: Kolymbas, D. and Fellin, W., A. A. Balkema, Rotterdam (2000)

---

#### Publizierte Konferenzbeiträge 1999

1. **Göz, M. F. and Laín, S.**  
Spurious oscillations of bubbles in Euler-Lagrange simulations of dispersed two-phase flows induced by drag law and discretization scheme, Proceedings of the 9th Workshop on Two-Phase Flow Predictions, Merseburg, April 1999
2. **Hussainov, M., Kartushinsky, A., Kohnen, G. and Sommerfeld, M.**  
Experimental investigations of the modification of grid-generated turbulence by large solid particles, Proceedings 4th Int. Symposium on Engineering Turbulence Modelling, Corsica, May 1999
3. **Kohlmann, J., Slowik, G. und Hartke, O.**  
Die Steuerung der Abscheideleistung von Zyklonen im Betrieb, Zyklonabscheider in der Energie- und Verfahrenstechnik, 27./28. 10. 1999, Leverkusen, erscheint als VDI-Bericht
4. **Kohnen, G., Häder, R. und Sommerfeld, M.**



Numerische Analyse von Turbulenzeffekten in verdampfenden Sprühnebeln auf der Basis experimenteller Untersuchungen, GVC-Jahrestagung 1999, Chemie Ingenieur Technik, Jahrg. 71, 955 (1999)

5. **Lain, S., Bröder, D. and Sommerfeld, M.**  
Numerical studies on the hydrodynamics in a bubble column using the Euler-Lagrange approach, Proceedings of the 9th Workshop on Two-Phase Flow Predictions, Merseburg, April 1999

---

#### Publizierte Konferenzbeiträge 1998

1. **Böttner, C.-U., Kohnen, G. and Sommerfeld, M.**  
Numerical calculations of the interaction between fluid dynamics and electrostatics applied to powder painting process, Proceedings of the 14th ILASS Europe 98, Manchester, UK, 639 ff (1998)
2. **Bröder, D. and Sommerfeld, M.**  
Simultaneous measurements of continuous and dispersed phase in bubble columns by PDA, Proceedings Ninth International Symposium on Applications of Laser Techniques to Fluid Mechanics, Lisbon, Portugal, July 1998, Vol. 2, Paper 27.2. (1998)
3. **Bröder, D., Sommerfeld, M. and Tisler, S.**  
Analysis of the hydrodynamics in a bubble column by phase-Doppler anemometry, Proceedings Third International Conference on Multiphase Flow (ICMF'98), Lyon, France, June 1998
4. **Sommerfeld, M.**  
Numerical calculation of particulate flows in process equipment, ECCOMAS 98, Proceedings of the Fourth ECCOMAS Computational Fluid Dynamics Conference, Athens, Greece, Wiley & Sons, Vol. 2, 630-639 (1998)
5. **Sommerfeld, M.**  
Numerische Strömungsberechnung, Mischen und Rühren: Grundlagen und moderne Verfahren für die Praxis (Hrsg. VDI), 103-144 (1998)

---

#### Publizierte Konferenzbeiträge 1997

1. **Domnick, J., Lindenthal, A., Rüger, M. and Sommerfeld, M.**  
Numerical and experimental investigations of the spray coating process, accepted for presentation at the 7th International Conference on Liquid Atomization and Spray Systems, ICLASS-97, Korea, Aug. 1997
2. **Kohnen, G. and Sommerfeld, M.**  
Analysis of turbulence modification in a backward facing step flow using the Euler-Lagrange approach, Multiphase Flow (Eds. Chen, X. and Ge, M.), Proceedings of the the International Symposium on Multiphase Flow, Beijing, China, 242-249 (1997)
3. **Kohnen, G. and Sommerfeld, M.**  
The effect of turbulence modelling on turbulence modification in two-phase flows using the Euler-Lagrange approach, Proceedings of the Eleventh Symposium on Turbulent Shear Flows, Grenoble, France, Sept. 1997, Vol. 3, P3: 23-28 (1997)
4. **Mai, A., Kohnen, G. and Sommerfeld, M.**  
Spray coating of solid particles: Process optimization using numerical calculations, accepted for presentation at the 7th International Conference on Liquid Atomization and Spray Systems, ICLASS-97, Korea, Aug. 1997
5. **Sommerfeld, M. (invited lecture)**  
Analysis of isothermal and evaporating sprays using phase-Doppler anemometry and numerical calculations, 2nd International Symposium on Turbulence, Heat and Mass Transfer (Eds. K. Hanjalic and T.W.J. Peeters), Delft University Press, 55-68 (1997)
6. **Sommerfeld, M., Decker, S. and Kohnen, G.**  
Time-dependent calculation of bubble columns based on the time-averaged Navier-Stokes equations with turbulence model, Proceedings of the Japanese-German Symposium on Multi-Phase Flow, Tokyo, Japan, 323-334 (1997)

---

#### Publizierte Konferenzbeiträge 1996

1. **Decker, S. and Sommerfeld, M.**  
Calculation of particle suspension in agitated vessels with the Euler-Lagrange approach, Fluid Mixing V (Ed. H. Benkreira), Bradford, June 1996, ICHIME Symposium Series, No. 140, 71-82 (1996)
2. **Sommerfeld, M. and Huber, N.**  
Temporal and spatial inhomogeneities of the particle concentration in dilute pneumatic conveying, The 5th World Congress of Chemical Engineering, Second International Particle Technology Forum, San Diego, USA, July 1996, Proceedings Vol. 6, 443-450 (1996)

---

#### Publizierte Konferenzbeiträge 1995

1. **Sommerfeld, M.**  
Advanced phase-Doppler anemometry to characterize two-phase flows (invited lecture), Modern Measuring Techniques for Multiphase Flows (Eds. Xu, Y. and Wang, S.), Proceedings of the International Symposium on Measurement Techniques for Multiphase Flows, Nanjing, China, April 1995, 403-404 (1995)
  2. **Sommerfeld, M. and Huber, N.**  
A laser strobe technique combined with digital image analysis to study particle-wall collisions, Modern Measuring Techniques for Multiphase Flows (Eds. Xu, Y. and Wang, S.), Proceedings of the International Symposium on Measurement Techniques for Multiphase Flows, Nanjing, China, April 1995, 428-440 (1995)
-