

List of Publications, Antti Hellsten, May 29th, 2020

A. Peer reviewed scientific articles

1. Vuorinen, V., Aarnio, M.A., Alava, M., Alopaeus, V., Atanasova, N., Auvinen, M., Balasubramanian, N., Bordbar, H., Erästö, P., Grande, R., Hayward, N., Hellsten, A., Hostikka, S., Hokkanen, J., Kaario, O., Karvinen, A., Kivistö, I., Korhonen, M., Kosonen, R., Kuusela, J., Lestinen, S., Laurila, E., Nieminen, H.J., Peltonen, P., Pokki, J., Puisto, A., Råback, P., Salmenjoki, H., Sironen, T., Österberg, M. 2020. Modelling aerosol transport and virus exposure with numerical simulations in relation to SARS-CoV-2 transmission by inhalation indoors. *Safety Science* 130, 104866.
2. Karttunen, S., Kurppa, M., Auvinen, M., Hellsten, A. and Järvi L. Large-eddy simulation of the optimal street-tree layout for pedestrian-level aerosol particle concentrations – A case study from a city-boulevard. *Atmospheric Environment: X* 6 (2020) 100073.
3. Auvinen M, Boi S, Hellsten A, Tanhuanpää T, Järvi L. (2020): Study of Realistic Urban Boundary Layer Turbulence with High-Resolution Large-Eddy Simulation. *Atmosphere*. 2020; 11(2):201. <https://www.mdpi.com/640672>
4. Maronga, B., Banzhaf, S., Burmeister, C., Esch, T., Forkel, R., Fröhlich, D., Fuka, V., Gehrke, K. F., Geletič, J., Giersch, S., Gronemeier, T., Groß, G., Heldens, W., Hellsten, A., Hoffmann, F., Inagaki, A., Kadasch, E., Kanani-Sühring, F., Ketelsen, K., Khan, B. A., Knigge, C., Knoop, H., Krč, P., Kurppa, M., Maamari, H., Matzarakis, A., Mauder, M., Pallasch, M., Pavlik, D., Pfafferoth, J., Resler, J., Rissmann, S., Russo, E., Salim, M., Schrempf, M., Schwenkel, J., Seckmeyer, G., Schubert, S., Sühring, M., von Tils, R., Vollmer, L., Ward, S., Witha, B., Wurps, H., Zeidler, J., and Raasch, S.: Overview of the PALM model system 6.0, *Geosci. Model Dev. Discuss.*, <https://doi.org/10.5194/gmd-2019-103>, accepted for publication in *Geoscientific Model Development*, 2020.
5. Koivisto, P., Honkanen, T., Auvinen, M., Hellsten, A. and Kahma, K., 2019. De-Icing Fluid Flow-Off from a Flat Plate in an Accelerating Airstream. Published on-line in *AIAA Journal*.
6. Kurppa, M., Hellsten, A., Roldin, P., Kokkola, H., Tonttila, J., Auvinen, M., Kent, C., Kumar, P., Maronga, B., and Järvi, L.: Implementation of the sectional aerosol module SALSA2.0 into the PALM model system 6.0: model development and first evaluation, *Geosci. Model Dev.*, 12, 1403-1422, <https://doi.org/10.5194/gmd-12-1403-2019>, 2019.
7. Kurppa, M.; Hellsten, A.; Auvinen, M.; Raasch, S.; Vesala, T.; Järvi, L., 2018. Ventilation and Air Quality in City Blocks Using Large-Eddy Simulation—Urban Planning Perspective. *Atmosphere* 9(2), 65. <https://doi.org/10.3390/atmos9020065>
8. Auvinen, M., Järvi, L., Hellsten, A., Rannik, U. and Vesala, T., 2017. Numerical Framework for the Computation of Urban Flux Footprints Employing Large-eddy Simulation and Lagrangian Stochastic Modeling. *Geoscientific Model Development* 10, 4187–4205. <https://doi.org/10.5194/gmd-10-4187-2017>.
9. Hellsten, A., Ketelsen, K., Barmpas, F., Tsegas, G., Moussiopoulos, N. And Raasch, S. 2017. Nested Multi-Scale System Implemented in the PALM Large-Eddy Simulation Model. Klemens, M., Kallos, G., Eds. In: *Air Pollution Modelling and its Application XXV*, pp. 287-292. ISBN 978-3-319-57644-2. Springer.
10. Chaudhari A., Vuorinen V., Hämäläinen J., and Hellsten A., 2017. Large-Eddy Simulations for Hill Terrains: Validation with Wind-Tunnel and Field Measurements. *Computational and Applied Mathematics*, 37(1), doi:10.1007/s40314-017-0435-z
11. Chaudhari A., Agafonova A., Hellsten A., Sorvari J., 2017. Numerical study of the impact of atmospheric stratification on a wind-turbine performance. *Journal of Physics: Conf. Series*, vol. 854 (1), Article ID: 012007, IOP Publishing. 11 p. doi:10.1088/1742-6596/854/1/012007.

12. Romakkaniemi, S., Maalick, Z., Hellsten, A., Ruuskanen, A., Väisänen, O., Ahmad, I., Tonttila, J., Mikkonen, S., Komppula, M., and Kühn, T., 2017. Aerosol-landscape-cloud interaction: Signatures of topography effect on cloud droplet formation. *Atmos. Chem. Phys.*, 17, 7955-7964. <https://doi.org/10.5194/acp-17-7955-2017>.
13. Chaudhari, A., Conan, B., Aubrun, S., and Hellsten, A., 2016. Numerical study of how stable stratification affects turbulence instabilities above a forest cover: application to wind energy. *Journal of Physics: Conference Series*, 753, 032037, doi:10.1088/1742-6596/753/3/032037.
14. Agafonova, O., Avramenko, A., Chaudhari, A. and Hellsten, A., The effects of the canopy created velocity inflection in the wakes development of a large wind turbine array, *Journal of Physics: Conference Series*, 753, 032001. doi:10.1088/1742-6596/753/3/032001.
15. Chaudhari, A., Hellsten, A. and Hämäläinen, J. 2016. Full-Scale Experimental Validation of Large-Eddy Simulation of Wind Flows over Complex Terrain: The Bolund Hill. *Advances in Meteorology*, vol. 2016, Article ID 9232759, 14 p. doi:10.1155/2016/9232759
16. Conan, B., Chaudhari, A., Aubrun, S., van Beeck, J., Hämäläinen, J., Hellsten, A., 2016. Experimental and Numerical Modelling of Flow Over Complex Terrain: the Bolund hill, *Boundary-Layer Meteorology*, 158(2):183-208, doi:10.1007/s10546-015-0082-0.
17. Hellsten, A., Luukkonen, S.M., Steinfeld, G., Kanani, F., Markkanen, T., Järvi, L., Vesala, T., Raasch, S., 2015. Footprint evaluation for flux and concentration measurements for an urban-like canopy with coupled Lagrangian stochastic and large-eddy simulation models. *Boundary-Layer Meteorology*, 157(2):191-217, doi:10.1007/s10546-015-0062-4.
18. Tonttila, J., O'Connor, E.J., Hellsten, A., Hirsikko, A., O'Dowd, C., Järvinen, H. and Räisänen, P., 2015. Turbulent structure and scaling of the inertial subrange in a stratocumulus-topped boundary layer observed by a Doppler lidar. *Atmospheric Chemistry and Physics*, 15:5873-5885. doi:10.5194/acp-15-5873-2015.
19. Chaudhari, A., Hellsten, A., Agafonova, O. and Hämäläinen, J., 2014. Large eddy simulation of boundary-layer flows over two-dimensional hills, In: Fontes, M., Günther, M. and Marheineke, N., eds., *Progress in Industrial Mathematics at ECMI 2012*, pp. 211-218, ISBN 978-3-319-05364-6. doi:10.1007/978-3-319-05365-3_29.
20. Hellsten, A. and Zilitinkevich, S., 2013. Role of convective structures and background turbulence in the dry convective boundary layer. *Boundary-Layer Meteorology* 149(3):323-353. doi:10.1007/s10546-013-9854-6.
21. Tack, A. Koskinen, J., Hellsten, A., Sievinen, P., Esau, I., Praks, J., Kukkonen, J. and Hallikainen, M., 2012. Morphological database of Paris for atmospheric modeling purposes. *Journal of Selected Topics in Applied Earth Observations and Remote Sensing* 5(6):1803-1810. doi:0.1109/JSTARS.2012.2201134.
22. Saloranta, J. and Hellsten, A., 2011. Evaluation of a general CFD-solver for a micro-scale urban flow. *International Journal of Environment and Pollution*, 44(1/2/3/4):368-375.
23. Franke, J., Hellsten, A., Schlünzen, K.H. and Carissimo, B., 2011. The COST 732 best practice guideline for CFD simulation of flows in the urban environment – A summary. *International Journal of Environment and Pollution*, 44(1/2/3/4):419-427. doi:10.1504/IJEP.2011.038443.
24. S. Di Sabatino, R. Buccolieri, H. Olesen, M. Ketzler, R. Berkowicz, J. Franke, M. Schatzmann, H. Schlünzen, B. Leitl, R. Britter, C. Borrego, A.M. Costa, S. Trini Castelli, T. Reisin, A. Hellsten, J. Saloranta, N. Moussiopoulos, F. Barmpas, K. Brzozowski, I. Goricsan, M. Balczò, J. Bartzis, G. Efthimiou, J.L. Santiago, A. Martilli, M. Piringer, M. Hirtl, A. Baklanov, R. Nuterman and A. Starchenko, 2011. COST 732 in practice: the MUST model evaluation exercise. *International Journal of Environment and Pollution*, 44(1/2/3/4):403 – 418.
25. Hellsten, A., 2010. Case study on code verification using the method of manufactured

- solutions: 6th order finite difference method for homogeneous turbulence. In: *The fifth International Symposium on Computational Wind Engineering*, Chapel Hill, North Carolina, USA, May 23-27, 2010.
26. Franke, J., Hellsten, A., Schlünzen, H. and Carissimo, B., 2010. The Best Practice Guideline for the CFD simulation of flows in the urban environment: an outcome of COST 732. In: *The fifth International Symposium on Computational Wind Engineering*, Chapel Hill, North Carolina, USA, May 23-27, 2010.
 27. A. Hellsten and S. Wallin, 2009. Explicit algebraic Reynolds stress and nonlinear eddy-viscosity models, (review article). *International Journal of Computational Fluid Dynamics* 23(4):349-361.
 28. A. Hellsten. 2005. New advanced *k-w* turbulence model for high-lift aerodynamics. *AIAA Journal*, 43(9):1857-1869.
 29. A. Hellsten and H. Bézard, 2005. Behaviour of nonlinear two-equation turbulence models at the free-stream edges of turbulent flows. In: W. Rodi and M. Mulas, eds., *Engineering Turbulence Modelling and Experiments 6*, pp. 147-156. Elsevier, Villasimius, Italy, May 2005.
 30. S. Wallin, A. Hellsten, M. Schatz, T. Rung, D. Peshkin, and A.V. Johansson, 2003. Streamline curvature corrected algebraic Reynolds stress turbulence modelling. In: *3rd International Symposium on Turbulence and Shear Flow Phenomena*, vol. 1, pp. 45-50, Sendai, Japan, June 2003.
 31. A. Hellsten. 2002. Curvature corrections for algebraic Reynolds stress modeling: a discussion. *AIAA Journal*, 40(9):1909-1911.
 32. A. Hellsten and S. Laine, 1998. Extension of the *k-w* shear-stress transport turbulence model for rough-wall flows. *AIAA Journal*, 36(9):1728-1729.
 33. P. Kaurinkoski and A. Hellsten. 1998. Numerical simulation of a supersonic base bleed projectile with improved turbulence modelling. *Journal of Spacecraft and Rockets*, 35(5):606-611.
 34. J. Hoffren and A. Hellsten, 1997. Turbulence model tests in subsonic airfoil flows. In W. Haase, E. Chaput, E. Elsholz, M.A. Leschziner, U.R. Müller, eds., *Notes on Numerical Fluid Mechanics*, vol. 58.

B. Non-refereed scientific articles

1. Vuorinen, V., Aarnio, M.A., Alava, M., Alopaeus, V., Atanasova, N., Auvinen, M., Balasubramanian, N., Bordbar, H., Erästö, P., Grande, R., Hayward, N., Hellsten, A., Hostikka, S., Hokkanen, J., Kaario, O., Karvinen, A., Kivistö, I., Korhonen, M., Kosonen, R., Kuusela, J., Lestinen, S., Laurila, E., Nieminen, H.J., Peltonen, P., Pokki, J., Puisto, A., Råback, P., Salmenjoki, H., Sironen, T., Österberg, M. 2020. Modelling aerosol transport and virus exposure with numerical simulations in relation to SARS-CoV-2 transmission by inhalation indoors. arXiv.org: <https://arxiv.org/abs/2005.12612>.
2. Auvinen, M., L. Järvi, S. Boi, A. Hellsten, and T. Vesala, 2017. Resolving the urban micrometeorology with large-eddy simulation. In: *Proceedings of 'the Center of Excellence in Atmospheric Sciences (CoE ATM) -From Molecular and Biological Processes to the Global Climate' Annual Meeting 2017*, Editors: Päivi Haapanala, Anna Lintunen, Joonas Enroth, and Markku Kulmala, REPORT SERIES IN AEROSOL SCIENCE N:o 202.
3. Kurppa, M., A. Hellsten, M. Auvinen, and L. Järvi, 2017. High-resolution dispersion and air quality modelling in urban areas. In: *Proceedings of 'the Center of Excellence in Atmospheric Sciences (CoE ATM) -From Molecular and Biological Processes to the Global Climate' Annual Meeting 2017*, Editors: Päivi Haapanala, Anna Lintunen, Joonas Enroth, and Markku Kulmala, REPORT SERIES IN AEROSOL SCIENCE N:o 202.

4. Hellsten, A., Ketelsen, K., Barmpas, F., Tsegas, G., Moussiopoulos, N. And Raasch, S., 2016. Nested Multi-Scale System Implemented in the PALM Large-Eddy Simulation Model. In: *22nd AMS Symposium on Boundary Layers and Turbulence*, June 2016, Salt Lake City, UT, USA. <https://ams.confex.com/ams/32AgF22BLT3BG/webprogram/Paper295810.html>
5. Auvinen, M., Järvi, L., Vesala, T., and Hellsten, A., 2016. Towards Improved Interpretation of Urban Measurements; Evaluation of Footprints in a Real City Environment with LES. In: *22nd AMS Symposium on Boundary Layers and Turbulence*, June 2016, Salt Lake City, UT, USA. <https://ams.confex.com/ams/32AgF22BLT3BG/webprogram/Paper295617.html>
6. Chaudhari, A., Conan, B., Aubrun, S. and Hellsten, A., 2016. Numerical study of how stable stratification affects turbulence instabilities above a forest cover: application to wind energy. Poster presentation in TORQUE 2016. *Journal of Physics: Conference Series*, 753, 032037, 11 p. doi:10.1088/1742-6596/753/3/032037.
7. Agafonova, O., Avramenko, A., Chaudhari, A. and Hellsten A., 2016. The effects of the canopy created velocity inflection in the wakes development of a large wind turbine array. *Journal of Physics: Conference Series*, 753, 032001, 9 p. <http://iopscience.iop.org/article/10.1088/1742-6596/753/3/032001/pdf>. doi:10.1088/1742-6596/753/3/032001
8. Hellsten, A., Tack, A. and Letzel, M., 2014. Validation of the PALM LES model and grid-resolution study using the Michelstadt wind-tunnel validation test case. In: *7th Japanese-German Meeting on Urban Climate*, Hannover, Germany, 6-10 Oct, 2014.
9. Baumann-Stanzer K., Leitl B., Trini Castelli S., Milliez C.M., Berbekar E., Rakai A., Fuka V., Hellsten A., Petrov A., Efthimiou G., Andronopoulos S., Tinarelli G., Tavares R., Armand P., Gariazzo C., 2014. Evaluation of local-scale models for accidental releases in built environments – results of the “Michelstadt exercise” in COST Action ES1006. In: *16th International Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes*, 8-11 September 2014, Varna, Bulgaria.
10. Chaudhari, A., Ghaderi Masouleh, M., Janiga, G., Hämäläinen, J. and Hellsten, A., 2014. Large eddy simulation of atmospheric flows over the Bolund hill. In: *The sixth International Symposium on Computational Wind Engineering*, Hamburg, Germany, June 9-12, 2014.
11. Milliez, M. and Hellsten, A., 2014. Evaluation of dispersion models for improvement and guidance for the use of local-scale emergency response tools; the “Michelstadt’ modelling exercise - COST action ES1006. In: *The sixth International Symposium on Computational Wind Engineering*, Hamburg, Germany, June 9-12, 2014.
12. Barmpas, F., Trini Castelli, S., Franke, J., Leitl, B., Harms, F., Andronopoulos, S., Balczo, M. and Hellsten, A., 2014. Model evaluation protocol for cases of emergency response in urban areas. In: *The sixth International Symposium on Computational Wind Engineering*, Hamburg, Germany, June 9-12, 2014.
13. Chaudhari, A., Agafonova, O., Hämäläinen, J., Hellsten, A., 2014. Large eddy simulation of atmospheric boundary-layer flows over complex terrains with applications in wind energy. In: *Proceedings of the 11th World Congress on Computational Mechanics, (WCCM XI)*, Barcelona, Spain, 2014.
14. Hellsten, A. and Zilitinkevich S., 2013. Role of convective structures and background turbulence in dry convective boundary layers. In: *13th EMS Annual Meeting*, Reading, UK, 9-13 September 2013.
15. Zilitinkevich S., Kleorin, N., Rogachevskii, I., Hellsten, A., Tyuryakov, S., Troitskaya, Y.I., Mareev, E.A., Kadantsev, E., 2013. Organised structures, non-local transports and turbulence closure for atmospheric convective boundary layer (CBL). In: *13th EMS Annual Meeting*, Reading, UK, 9-13 September 2013.
16. Tu, M.-K., Nordbo, A., Hellsten, A., Rinne, J., Vesala, T., 2013. Large eddy simulations for forest canopy. In: *Proceedings of FCoE in Physics, Chemistry, Biology and Meteorology of*

- Atmospheric Composition and Climate Change' Annual Meeting 2013* , Kulmala, M, Lappalainen H.-K., Brus, M., Kontkanen, J. Eds. Report Series in Aerosol Science (ISSN 0784-3496), ISBN 978-952-5822-75-5 (electronic publication).
17. Tu, M.-K., Nordbo, A., Hellsten, A., Markkanen, T. Rinne, J., Vesala, T., 2013. Surface heterogeneity and flux measurement height in large eddy simulations. In: *Japan Geoscience Union Meeting*, Chiba, Japan, 19-24 May 2013.
 18. Vesala, T., Tu, S., Steinfeld, G., Zhang, J., Raasch, S., Markkanen, T., Kanani, F., Hellsten, A., Mammarella, I., Järvi, L., Nordbo, A., Rannik, Ü., 2013. Flux Footprint Estimation for Complex Surfaces. In: *9th International Carbon Dioxide Conference*, Beijing, China, 3.-7. June 2013.
 19. Tack, A., Praks, J., Sievinen, P. Hellsten, A. 2012. SAR interferometry for atmospheric modeling and risk assessment in urban environment. In: *Synthetic Aperture Radar, 2012. EUSAR. 9th European Conference*, 2012.
 20. Tu, S.M., Kanani, F., Hellsten, A., Markkanen, T., Raasch, S. and Vesala, T. 2012. Flux Footprint over Idealized Urban Surface Using Large Eddy Simulation model. In: *European Meteorological Society Annual Meeting EMS2012*, 2012.
 21. Chaudhari, A., Hellsten, A., Agafonova, O. and Hämäläinen, J., 2012. Large eddy simulation of boundary-layer flows over two-dimensional hills. In: *the 17th European Conference on Mathematics for Industry (ECMI 2012)*, Lund, Sweden, July 23-27, 2012.
 22. Tu, S.M., Kanani, F., Hellsten, A., Markkanen, T., Raasch, S., Järvi, L., Nordbo, A. and T.Vesala, T., 2012. Evaluation of flux footprint over idealized urban surface by large eddy simulation model. In: *Proceedings of Finnish Center of Excellence in 'Physics, Chemistry, Biology and Meteorology of Atmospheric Composition and Climate Change', and Nordic Center of Excellence in 'Cryosphere-Atmosphere Interactions in a Changing Arctic Climate' Annual Meetings 2012* , Kulmala, M, Lappalainen H.-K., Boy, M., Brus, M., Nieminen, T. Editors. Report N:o 134 in Report Series in Aerosol Science (ISSN 0784-3496), ISBN 978-952-5822-61-8 (electronic publication), 2012.
 23. Hellsten, A. and Zilitinkevich, S., 2011. Large eddy simulation studies on convective atmospheric boundary layer. In: J. Freund and R. Kouhia, Eds., *Proceedings of the 24th Nordic Seminar on Computational Mechanics*. Aalto University, 2011, (invited plenary lecture).
 24. Martilli, A., Santiago, J.L., Reisin, T. G., Baklanov, A., Bartzis, J., Buccolieri, R., Costa, A. M., Di Sabatino, S., Efthimiou, G., Franke, J., Hellsten, A., Nuterman, R. and Tavares, R., 2011. How to choose the best simulation for a specific purpose? In: *14th Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes*, Kos, Greece, 2-6 October 2011. Environmental Technology Laboratory, Department of Mechanical Engineering, University of West Macedonia, Greece.
 25. Sievinen P., Praks J., Hallikainen M., Koskinen J., Hellsten, A. and Kukkonen J., 2009. Urban morphology retrieval by means of remote sensing for the modelling of atmospheric dispersion and micro-meteorology. In: *Digest IEEE International Symposium on Geoscience and Remote Sensing (IGARSS'09)*, Cape Town, South Africa, 4 pp., 2009.
 26. H. R. Olesen, A. Baklanov, J. Bartzis, F. Barmpas, R. Berkowicz, K. Brzozowski, R. Buccolieri, B. Carissimo, A. Costa, S. Di Sabatino, G. Efthimiou, J. Franke, I. Goricsan, A. Hellsten, M. Ketznel, B. Leidl, R. Nuterman, E. Polreich, J. Santiago, R. Tavares., 2008. The MUST model evaluation exercise: patterns in model performance. In: *12th Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes*, Cavtat, Croatia, 6-10 October 2008. Croatian meteorological society.
 27. J. Franke, J. Bartzis, F. Barmpas, R. Berkowicz, K. Brzozowski, R. Buccolieri, B. Carissimo, A. Costa, S. Di Sabatino, G. Efthimiou, I. Goricsan, A. Hellsten, M. Ketznel, B. Leidl, R. Nuterman, H. Olesen, E. Polreich, J. Santiago, R. Tavares, 2008. The MUST model

- evaluation exercise: statistical analysis of modelling results. In: *12th Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes*, Cavtat, Croatia, 6-10 October 2008. Croatian meteorological society.
28. T. Brandt, A. Hellsten, J. Fröhlich, and D. von Terzi, 2008. Assessment of a hybrid LES-RANS concept based on eddy-viscosity reduction using resolved Reynolds stresses. In: B. Schrefler and U. Perego, eds., *8th World Congress on Computational Mechanics (WCCM8) & 5th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2008)*, Venice, Italy, 2008.
 29. J. Franke, A. Hellsten, K.H. Schlünzen, and B. Carissimo. 2007. Best practice guideline for the CFD simulation of flows in the urban environment - a summary. In: *11th Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes*, Cambridge, UK, July 2007. Cambridge Environmental Research Consultants.
 30. J. Saloranta and A. Hellsten, 2007. Evaluation of a general CFD-solver for a micro-scale urban flow. In: *11th Conference on Reviewed papers Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes*, Cambridge, UK, July 2007. Cambridge Environmental Research Consultants.
 31. J. Saloranta and A. Hellsten, 2007. Numerical error of symmetric interpolations produced by grid non-uniformity in finite-volume method. In: *ICFD Conference on Numerical Methods for Fluid Dynamics*. The Institute for Computational Fluid Dynamics at the Universities of Oxford and Reading, March 2007.
 32. A. Karvinen, H. Ahlstedt, J. Ala-Juusela, A. Hellsten, and R. Huhtanen, 2006. Effects of grid density and turbulence models on a jet in crossflow. In: A. Reis, J. Ward, and W. Leuckel, eds., *7th European Conference on Industrial Furnaces and Boilers*, Porto, Portugal, April 2006. Cenertec-Centro de Energia a Tecnologia.
 33. A. Hellsten, 2006. Effect of parallel system rotation on heat transfer in laminar pipe flow. In: *9th Finnish Mechanics Days*. Lappeenranta University of Technology, 2006.
 34. J. Saloranta and A. Hellsten, 2006. Verification of a Reynolds-averaged Navier-Stokes solver for direct numerical simulation of turbulent flow. In: *9th Finnish Mechanics Days*. Lappeenranta University of Technology, 2006.
 35. A. Hellsten, 2004. New advanced k - w turbulence model for high-lift aerodynamics. In: *42nd AIAA Aerospace Sciences Meeting*. AIAA paper 2004-1120, Reno, NV, USA, January 2004.
 36. A. Hellsten, 2003. Behaviour of linear and nonlinear two-equation turbulence models near interfaces of turbulent and laminar flow. In: *8th Finnish Mechanics Days*. Helsinki University of Technology, 2003.
 37. K. Salo and A. Hellsten, 2003. A simple Reynolds stress turbulence model to validate its algebraic truncations. In: *8th Finnish Mechanics Days*. Helsinki University of Technology, 2003.
 38. A. Hellsten, S. Wallin, and S. Laine, 2002. Scrutinizing curvature corrections for algebraic Reynolds stress models. In: *32nd AIAA Fluid Dynamics Conference*. AIAA paper 2002-2963, St. Louis, MO, USA, June 2002.
 39. A. Hellsten and S. Laine, 2000. Explicit algebraic Reynolds-stress modelling in decelerating and separating flows. In: *AIAA Fluids 2000*. AIAA paper 2000-2313, Denver, CO, USA, June 2000.
 40. P. Rautahaimo, A. Hellsten, S. Laine, and T. Siikonen, 2000. The importance of advanced turbulence modelling - examples of practical flows. In: *ECCOMAS 2000*, Barcelona, Spain, Sep 2000.
 41. A. Hellsten, 1998. Some improvements in Menter's k - w SST turbulence model. In: *29th AIAA Fluid Dynamics Conference*, AIAA paper 98-2554, Albuquerque, NM, USA, June 1998.
 42. A. Hellsten and S. Laine, 1997. Extension of the k - w SST turbulence model for flows over

- rough surfaces. In: *AIAA Atmospheric Flight Mechanics Conference*, pp. 252-260, AIAA paper 97-3577, New Orleans, LA, USA, August 1997.
43. P. Kaurinkoski and A. Hellsten, 1997. Numerical Simulation of A Supersonic Base Bleed Projectile with Improved Turbulence Modelling, In: *AIAA Atmospheric Flight Mechanics Conference*, AIAA-paper 97-3495, New Orleans, LA, USA, August 1997.
 44. S. Laine and A. Hellsten. Navier-Stokes Calculations for a Hybrid Laminar Aerofoil Section with and without Suction, In *2nd European Forum on Laminar Flow Technology*, Bordeaux, 1996. Paris: AAAF.
 45. P. Rautahaimo, T. Siikonen, and A. Hellsten, 1995. Diagonalization of the Reynolds-averaged Navier-Stokes equations with the Reynolds-stress turbulence model. In: *Proceedings of the IMACS-COST Conference on Computational Dynamics*, pp. 240-247, Lausanne, Switzerland, Sept. 1995.

C. Scientific books

1. J. Franke, A. Hellsten, K.H. Schlünzen and B. Carissimo. Best practice guideline for the CFD simulation of flows in the urban environment. Technical report, COST Office, Avenue Louise 149, 1050 Brussels, Belgium, May 2007.
2. A. Hellsten. New Two-Equation Turbulence Model for Aerodynamics Applications. PhD thesis, Helsinki University of Technology, Espoo, Finland, February 2004. ISBN 951-22-6933-3 (print), 951-22-6934-1 (pdf, available at <http://lib.hut.fi/Diss/>).
3. A. Hellsten and P. Rautahaimo, eds. 8th ERCOFTAC/IAHR/COST workshop on refined turbulence modelling, Laboratory of Applied Thermodynamics, Report 127, Espoo, Finland, 1999.

D. Publications intended for professional communities (Technical reports)

1. J. Saloranta and A. Hellsten. Semi-nonmatching block interface scheme for a structured-grid based flow solver. Technical Report B-57, Helsinki University of Technology, Laboratory of Aerodynamics, 2007.
2. J. Schweighofer and A. Hellsten. Computations of Viscous Flow around the HSVA-1 Tanker Using two Versions of the k - w Turbulence Model. Technical report, Helsinki University of Technology, Laboratory of Aerodynamics, Report B-51, 1999.
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